Forest Cy. 8/17-19 - 1912
at Estherville 8/20-22 "
Okoboji 8/24-28. "
Ocheyedan 8/29 "
Clear Lake 8/30 "
Rice lake 8/31, "
Storm Lake, 9/2 "

Cherokee 9/2 "
Sac City, 9/3 "
Lake View, 9/3 "
Harlan - 9/4-5 "
Co. Bluffs to Red Oak 9/6 "
Chariton, 9/6 "
Indianola 9/7 "
Coon Valley "

Muscatine co. 9/21 "
Confalo 10/1 "
Keokuk, 10/5 "
St. Louis 10/6 "
Montrose 10/7 "
Irish woods. 10/14 "
Anamosa, 10/19 "
Homestead 10/22 "
Palisades, Ia. 10/26 "

Earlville, 11/14 "
Floyd co. 11/16 "
Burgess - 11/25 "
Burger's 11/27 "
Schuyler, Neb. 11/28 "
Clarkson, " 11/29 "
Dodge " 11/24 "
Wahoo " 11/30 "
Prague " 11/31 "
Weston " 12/1 "
Weston to Valparaiso " " 12/2
Coe mollusks. 6/20 13
Emmetsburg to Estherville

1920
Sioux City - Oct. 12
Audubon co. "

Okoboji 6/21-22 1913
Rockwell Cy. 6/23 "
From Spencer
Fraser - 6/23 "

B. Shimek
Iowa City
Iowa.

Notify owner if you find this book and he will pay you for your trouble.

Aug. 17, 1912 - Sat.

Left Clear Lake for Garner at 7.35 (late 7.45) a.m.
Reached Forest City at 9.55 a.m.
There was a very heavy rain last night and the roads are muddy. Sky nearly clear.
Drove out to Pilot Knob with Mr. Eugene Secor & Mr. Th. Thorson, school man.
Found Brasenia & both yellow & white pond lilies.
There is also a floating bog, made up chiefly of a grass (see spec.) & there are some large sedges, etc.
Many large leeches & also much green Spongilla in the pond.
Some Potam. natans (?) which I could not reach.
Pellisera canina grows on wooded banks.

Trees, near Deadman's Lake etc.

Q. macrocarpa
Q. rubra.
Q. velutina
Q. (schneckii?)
Pyrus coronaria
Cornus paniculata
Q. alba ! ! !
Ostrya virginiana.
Prunus pennsylvanica (fine fruit)
corylus americana.
Fraxinus americana
" virginiana
Celastrus scandens

Found Riccia in Deadman's Lake, - very abundant, in clusters.

The bottom is muddy, with many dead leaves. In this stuff I dredged a Sphaerium & large Pisidium, - the latter chiefly nearer shore than Sphaerium. Found 1 Ancylus diaphanus on leaf of Castalia.
Also found a few Physa, but the aquatic pulmonates are curiously almost wanting in the lake.
I also looked at several points for terrestrial shells, but found none on Pilot Knob. It seems to be too sandy for terrestrial forms.
Found a big Phallus impudicus in deep woods, and preserved it. With it were two "eggs". Saved all.
Looked into kettle hole on N. side of road (in Winnebago co.). This is very heavily wooded.

Photos 23-24. Brasenia with Nymphaea odorata in background. Looking S.E. - Deadman Lake

Photos 15-16. Nuphar - looking SW

Photos 21-22 - Looking S - Cyperus — in background & bunch of white pond lilies in center.

Went up to top of Pilot Knob and found it closely pastured, with few native plants remaining.

We went down on S.E. side and saw a number of white oaks.

Mr. Lewis says these are the only ones in this part of country.

Returned & had supper with Mr. & Mrs. Thorson. Packed, &c

Aug. 18, 1912 Sunday.

Started from Forest City at 7:25 a.m. Drove to Lake Edwards.

E. of the lake (1½ mi) is a rough place with small bur-oak groves.

Lake Edwards is full of rushes at N. end, & sedges & grasses are all around border. many birds on the lake.

Found Pyr. striatella in willow thicket E. of Lake. ~~also Limnodrilus~~

Storm came up.

Drove to Crystal Lake.

Worked S. & E. shore. Bottom on both these shores sandy, but dead algae along edge make much of it foul. Mollusk fed. One slime mould. Hot & muggy - more storm coming. Collected a few fungi & a few fl. plants.

Plots 25 = W. side of lake
" 5 = E. " " "
" 6 = S. " " "
all taken from shore at
S.E. part of lake.
(26 failed.)
Took dinner at restaurant &
drove back to Lake Edwards.
(at Crystal Lake I got 1
Plan. trivolvis – 2 or 3 lean Plan.
bicarinata, many Plan. parvus, a few
Physa & Lymnaea humilis! Segmentina
armigera).
Left Crystal Lake at 12^50 pm.
Observed tree plants (see opp. page)
on E. side of lake. Note hickory!
It was quite common

S. of School SW. of Lake
Edwards, in sec. 11, there is
a clump of trees (basswood,
bur oak, etc) on W. end of
ridge, here abruptly sloping down

Trees – Crystal Lake E side

Q. macrocarpa
Prunus americana
" serotina
Vitis vulpina
Box elder
Ulmus fulva
" americana
Carya ~~alba~~ ovata
Psedera ~~[illegible]~~ quinquefolia
Populus tremuloides
Tilia americana
Rhus glabra
Fraxinus lanceolata
Aster sagittifolius?
Osmorhiza (smooth)
Thalictrum (dioicum ~~[illegible]~~ sp)
Silene stellata
Anemone [illegible]
Viola pubescens.
Smilacina stellata
Rudbeckia laciniata
Cryptotaenia canadensis
Smilacina racemosa
Sanicula marilandica
[illegible] punctata
Geum album
Clematis virginiana.

Elymus virginicus
Cornus (alternifolia; lake shore)
Corylus americana
Ostrya virginiana

Trees N.E. of Lake Edwards

Crataegus macracantha (common & well fruited)
Carya ~~alba~~ ovata (common)
Q. macrocarpa (very com.)
Fraxinus v. lanceolata
Carya ~~porcina~~ cordiformis
Q. rubra –
Salix amygdaloides.
Vitis vulpina
Prunus americana
Crataegus mollis.
Ulmus fulva (with Bifidaria)

A great many water birds appeared on the lake. I saw a Great Blue Heron, coots, rice hens (?), ducks, terns, etc.
In swamp I picked up Succinea retusa, & some dead Physa warreniana.
There was also a mud Riccia –

Plate 3 – N.W. arm of Lake Edwards
" 4 – Lake Edwards looking S. from same place
" 23x – 24x – looking S. across Lake Edwards.

Found Bifidaria armifera on red elm. Collected 15

Collected a spec. of Crataegus crusgalli on N. shore of Lake Edwards – in woods.
Examined 11 fruits – 7 had 5 seeds and 4 had 4 each.
Drove back in the rain
Spent evening at hotel in pressing plants and caring for material.
Toward morning a terrific electric and rain storm came up.

Aug. 19, 1912 Monday

Very wet in the morning. Went over to Mr. Leeds' place to look at his trees. He has a white ash from New York, and a Hard Maple (~~green~~ A. nigrum below) from Rice Lake. I took specimens. He also has black ash. Left at 9:51 a.m. for Thompson. Reached Thompson at 10:15. Could not get a team, but got in with Dane who was going out 3 miles to inspect ditch. The chauffeur took me out to Coon Grove for $1.50. Machine behaved badly, but I took photos 15, 16 & 21 of Coon Grove from south, looking north. The swamps around the ridge on which Coon Grove is located are about all drained.

The grove extends S. & SW down the rather gentle slope, covering all of elevation. This was probably possible because a swamp extended around on this side also. The grove itself is on a rough, broken, elevation.

Picked up a few ~~terrestrial~~ mollusks, Pyramis alternata, Zon. arboreum, etc. and some Bifidaria corticaria on bark of slippery elm.

Collected fungi and slime moulds, and also trees and shrubs.

Trees & shrubs — Corn Grove.

Juglans nigra
" cinerea
Carya cordiformis
Q. macrocarpa
Q. rubra
Celtis occidentalis
Fraxinus v. lanceolata
" nigra
Tilia americana
Prunus americana
" serotina
Populus tremuloides
Sambucus canadensis

Returned to Thompson at about 3 PM & waited until 6 for freight. Reached Estherville at 11 PM. Country all drained, cultivated & settled along line. Put up at Hotel Orleans.

Aug. 20, 1912 Tues

Started from Estherville after breakfast. Walked out dam (river dirty) & then went down on SW. side of river into woods.

Woods plants

Carya cordiformis
Ulmus fulva
" americana
Acer nigra (common)
" negundo
Tilia americana
Juglans nigra
Ostrya virginiana
Crataegus mollis
" crenulata
Rubus occidentalis
Sambucus canadensis
Q. macrocarpa
Vitis vulpina
Cornus paniculata
" alternifolia
Q. rubra

Prunus virginiana (1:4 in diam & 20 ft. high)
Zanthoxylum americanum
Celtis occidentalis
Celastrus scandens
Menispermum canadense
Populus deltoides
" tremuloides
Psedera ~~Ampelopsis~~ quinquefolia
Rhus glabra.
Salix amygdaloides
Ribes gracile
~~Celastrus scandens~~
soft maple
Rosa blanda
Amelanchier (like at Shirt tail)
Corylus americana
Salix nigra
Agastache scrophulariaefolia
Solidago v. gigantea
Campanula americana
Rudbeckia laciniata
Eupatorium purpureum
ageratoides
Zizia aurea (?) (wood sp.)
Geum album
Hystrix hystrix
Aster sagittifolius (?) (same as Lakeside)
Silene stellata
Adiantum pedatum
Asplenium filix-femina

Bromus [illegible]
[illegible]
[illegible] (rare)
Salix longifolia [illegible]
[illegible]

Asarum acuminatum
Solidago latifolia
Hepatica acutiloba
Cryptotaenia canadensis
Sanguinaria canadensis.
Aralia racemosa
Slender stalked broad leaf grass
Actaea alba
Aquilegia canadensis
Galium (lat... circaezans?)
Pedicularis canadensis
Osmorhiza (hairy)
Phlox divaricata.
Aralia nudicaulis
Caulophyllum thalictroides
Smilax hispida
Actaea rubra
Fragaria vesca
Uvularia grandiflora
Botrychium virginianum
Elymus virginicus
Osmunda claytoni
Arisaema triphyllum
Polygonatum canaliculatum [illegible]
Impatiens fulva
Lappula virginiana
Sanicula marilandica
Erigeron philadelphicus

[illegible]
Carex [illegible]
Desmodium [illegible]

Collected a good many fungi and slime molds.
Also Polyporus perfundus, Pycnan, alternata, etc.
Then followed river down to R.R. bridge and examined clam heaps on way. Found Unio gibbosus, Anodonta edentula, etc.
Followed up the river on N.E. side. Dredged a few Planorbis in pond (cut off lake) between R.R. & river.
Returned to Estherville & found Dr. Stephens.
Went up the river a short distance and collected a good many slime moulds.
Found a very fine lot of Physarella.
Also collected Zon. nitidus, Carychium exiguum, etc., on logs in wet place.
Returned to Laboratory via N. end of lake & Queen.
Read mail, pressed plants, etc.

Aug. 21, 1912 - Wed.

Cleaned and arranged materials collected.
In afternoon went for mail & picked up a lot of Campeloma decisum along sandy beach S. of big spring (Millers Bay).
They were mostly buried in the sand, near shore, especially at edges of masses of Ceratophyllum thrown out on shore.
Found 3 reversed ones!
Packed, etc., all afternoon and evening.
Day changeable, but mostly clear. Wind cool.

Aug. 22, 1912 Thursday.

Cleaned and packed materials.
A cool day, partly cloudy, wind mostly from N.
Did no collecting today. Too busy cleaning up material.

Aug. 23, 1912 Friday,

started for Estherville at 7 A.M. Went to Orleans. It is cloudy, and earlier sprinkled a little, but it is clearing up.

Reached Estherville at 10:[10] A.M. Mrs. Cook & Frankie were on train, - coming from Sioux Falls. Went up river & collected Zonitoides nitidus, Z. arboreus, Vitrea hammonis, Helicodiscus lineatus, Bifidaria contracta, B. pentodon, Carychium exiguum, Cochlicopa lubrica, Pyramidula alternata & P. striatella, Euconulus fulvus. Also slimemolds & fungi.

After lunch went down river about 1/2 mi S. of depot. Collected Unionidae as follows:

Unio metanevrus · Unio parvus
" ligamentinus · " rectus
" luteolus · " gibbosus
" undulatus ·
" rubiginosus
" ventricosus.

Margaritana complanata
" rugosa
Anodonta ovata(?)
" edentula
" ferussaciana.

Dr. Stephens also collected
Unio pustulosus
Margaritana truncata

I also found a large Campeloma and Ancylus rivularis.

The latter was very common on clam shells, sticks, etc.

Unio luteolus is the most common form, in places where bottom is sandy (or with little mud) fairly paving the bottom.

Unio undulatus is next most common form, but chiefly in mud.

The Zon. nitidus was in low, wet places with Carychium.

Returned to laboratory via W. Okoboji and the Queen.

The Campelomas were in a little cut-off pool near river (just a little bar across) and all were gravid!

Aug. 24, 1912 Saturday

Rained early in the morning. Spent forenoon in writing letters, packing, etc.

In afternoon took the Des Moines to Spirit Lake and attended to business at bank, etc. Then tried to study but was so weak that I had to return.

Went to spring bog north of Millers Bay and collected a lot of Pisidium.

Spent evening in packing, etc.

Aug. 25, 1912 Sunday

Spent most of day in packing, mounting slime moulds, cleaning shells.

Took photos of Stephens' baby.

Took dinner at Hotel with the Stephens and Giddings. Had a good many visitors. Miss Bradley of Des Moines & her party, and Mr. & Mrs. Jas. Ehret were among them.

The day was hot and sultry.

Aug. 26. Monday 1912

The morning ~~was~~ cold with a stiff breeze from the north.

Started out for Spirit Lake. Could not fix bicycle and had to plan for trip afoot.

Worked land shells on E. side N. end E. Okoboji forenoon. Then collected on S. shore of Spirit Lake.

Called on the Morris.

Took lunch at Orleans.

Walked along N. beach of E. Okoboji to small pond N.W. Found Limnaea humilis & caperata

Then worked along W. shore of Spirit Lake. Collected land shells in grove on S.W. shore. Also Planorbis, etc. on beach, collected on beach S. of Templar's Park.

Then went on to Marble place & collected on beach.

Went to Marble Lake. Grove along W. shore Spirit Lake are nearly all bur oak – a little green ash.

Marble grove contains.

Ulmus fulva – many
" americana
Tilia americana
Fraxinus v. lanceolata.
Salix amygdaloides
Ribes gracile
Ostrya virginiana
Carya cordiformis
Vitis vulpina
Symphoricarpos occidentalis
Crataegus ? few
" mollis Fr.
Celtis occidentalis (most abund)
Acer negundo
Rhus glabra
Prunus americana
Rubus occidentalis

Marble Lake is a shallow lake of the usual type of smaller kettlehole lakes. Here and there there are patches of rushes. The shores on E. side are mostly sandy & the shallow bottom is covered with small plants, Eleocharis

Also visited Hottes Lake
The Physa in Hottes Lake bottle are from small lake S.E. of Hottes Lake

walked back to Spirit Lake, took train for Arnold's Park (two hours late) and got in so late that large boats were all gone.

Dr. Lewis took us back to the Lab. in the Delta at about 11 P.M.

Tuesday, Aug. 27, 1912

Spent the day in mounting slimemolds, packing fungi and arranging other materials. The day was cool, but brisk, wind from north.

In evening went up to Lookout and took supper with Dr. & Mrs. Hill (& Miss Hill), Miss Bradley and Mrs. Stephens.
Called on Harbers.
Packed late into the night.

Aug. 28, 1912 Wednesday

A cool, windy day, wind from north, clear earlier, but in latter part of afternoon cloudy.

Hustled with packing, etc., but did not get out until about 2.00 P.M. Frank Hasher hauled stuff to Montgomery.

Giddings went along to head of lake to dredge.

Reached Montgomery at 3.50 P.M. & shipped stuff.

1 basket - Dept. of Botany
3 " Ella S. } Pd. by W. Exp.
1 box - " "
1 suit case - " "
1 tourists' case - " "
8 boxes by Fr. for Dept. Bot.
4 " " " " Geol.
7 kegs " " " "
1 box E. Cherry.

Collected Martynia in pasture. Also a Bidens & an Aster in swamp.

Along the way enormous numbers of Solidago rigida & Liatris scariosa were in flower, - also many other prairie flowers, - Aster novaeangliae, A. multiflorus, A. laevis, & other Solidagos, Linum, etc.

In low places Boltonia was exceedingly abundant & in fine flower.

At Montgomery I shipped my stuff and went to pasture S.E. & collected Martynia. Also a Bidens at pond N. of R.R.

Reached Lake Park at about 6.30 & put up at the Lake Park Hotel.

Spent evening in cleaning the large Lymnaea from pond W. of N. end of East Lake Okoboji.

Went to bed at 10.

Aug. 29, 1912, Thursday

Arose at 6 am. Cloudy and raw. Took breakfast. Went out to lake & collected cast up shells on beach of main lake just S. of road. Found unusually large Valvata tricarinata & very high scalariform, also collected mass of drift stuff on N. shore of smaller lake (or part of lake) N. of road. Train was late, left for Okoboji about 9:30 am. Went to moraine and collected plants. Farmer was cutting grass on lower slopes — for hay. Top shows vegetation stunted, but probably much better this year than usually on account of rains. Also collected plants on way back to Okoboji. Took dinner and at 1:21 pm. started for Rush Lake. Collected shells on S. shore. All dead, but some looked quite fresh. Dredged one living Physa.

Went to high ~~bank~~ on W. side and took photos 13 & 14 — 13 = time, 14 = snap, looking E across Rush Lake.

Went back to S. side and took photos 7 & 8 (time) and 5 & 6, (snap) looking N. across Rush Lake.

Returned to Okoboji and left for Emmetsburg at 4:45. Train crowded.

Put up at the Waverly Hotel at Emmetsburg. Spent evening in writing letters.

Aug. 30, 1912 Friday

Left Emmetsburg at 6:41 am (train 35 min. late). It rained heavily toward morning and the morning was drizzly.
Reached Clear Lake at 9 am. Went to cottage & took walk along beach with Glen. Picked up shells and a new ~~[illegible]~~.
At 11.40 am left for Mason City. Got bike and at 2 o'clock went north with Joe to place where Iowa Central crosses Lime creek.
Collected Physa, etc. at mouth of creek near RR bridge & then went

down creek to Big Slough. Saw many large white (cream) Gentians along slough from Turtle head &c. Picked up Pol. profunda & Pol. multilineata, Last probably, as slopes are being cleared.
Returned about 8:30 took supper, mailed plants to Miss C., put away material, and went to bed.

There are still deep woods (undisturbed) north of Lime creek & E. of Iowa Cent. RR. – down to big bend.
~~These beds were formerly great sloughs, – now all drained into Beaver creek. used for hay & farming.~~
~~The young Norwegian also raised flax and rye on peat, – both fair~~

Aug. 31, 1912 Saturday

A cloudy, drizzly day.
Left at 7:25 am. for Joice,
Went to E. end of Lake. (Rice Lake)
Worth Co.
This part is wooded.

Trees & shrubs, etc.

Q. macrocarpa - all outlying parts fr.
Juglans cinerea (grove) fr.
Q. rubra - common fr.
Prunus americana fr.
Populus tremuloides - common lf.
Carya ~~porcina~~ cordiformis fr.
Vitis vulpina fr.
Zanthoxylum americanum lf.
Prunus serotina - frequent fr.
Ulmus americana lf.
Q. velutina fr. [illegible]
Hard maple (eight below) fr.
Prunus virginiana - common fr.
Rhus glabra - large fr.
Ulmus fulva - lf.
Soft maple (native ?) lf.
Fraxinus v. lanceolata - frequent fr.
Tilia americana " fr.
Cornus paniculata fr. Ribes gracile lf.
Corylus americana fr.
Rhus toxicodendron lf.
Psedera
Ampelopsis quinquefolia fr. (green)
Fraxinus
Black ash lf.
Ostrya virginiana fr. (old)
Rubus villosus (allegh.) lf.
Crataegus macracantha lf.
Celastrus scandens lf.
Crataegus mollis fr.
 punctata fr.
Carya ovata fr.

Herbs

Solanum nigrum fl. & fr.
Verbena urticifolia fl.
Nepeta cataria fl.
Circium lanceolatum fl.
Asplenium filix-femina fr.
Solidago latifolia fl.
Aster salicifolius / cordifolius (?) (same as [illegible]) fl.
Prenanthes alba - bud
Desmodium acuminatum fr.
Fragaria virginiana (large) lf.
Sanicula marilandica fr.
Silene stellata fr.
Aralia nudicaulis lf.
Actaea rubra lf.
Thalictrum cornuti - lf.
"Lop seed" ~~Festuca~~ grass (slender stalks) fr.
Anemone virginiana fr.
Trillium cernuum lf.
Uvularia grandiflora fr. (old)
Phryma leptostachya fr.
Hystrix - (slender) fl.
Muhlenbergia - fr.
Agrimonia ~~hirsuta~~ striata fl.
Solidago & gigantea fl. - not [illegible] lf.
Apocynum - (androsaemifolium) fl.
Smilacina stellata lf.
 racemosa fr.
Smilax herbacea lf.
Viola cucullata lf.
Lycopus - (?) lf. fr. (green)
Mentha - (broad leaves) fl.
Helianthus - (tuberosus?) (broad thin leaves) fl.
Gentiana - flavida (cream flowers) fl.
Osmorhiza [illegible] lf.
Sanguinaria canadensis lf.

grass — entire fr. sessile fr.
Bromus purgans fr.
Rudbeckia laciniata fl. + lf.
Geum album fr.
actaea alba (fruit) fr.
Polygonatum giganteum fr.
Chenopodium hybridum lf.
Arisaema triphyllum fr.
Eupatorium purpureum fl.
Aquilegia canadensis lf.
Hydrophyllum virginianum fr.
Pteris aquilina fr.
Dioscorea villosa lf.
Eupatorium ageratoides fl
Circaea lutetiana fr
Osmorhiza — woolly — fr.
Podophyllum peltatum — fr.
Viola pubescens — lf
Prunella vulgaris — fr.
Pilea pumila — fr

Prunus pennsylvanica lf.
Viburnum lentago — fr. (green)
Rosa blanda — fr.

The best piece of woods was
in W ½ of sec. 20 – S. E. of
lake. This is in Worth Co.
Collected many slime molds,
fungi, etc
Also several land shells,
strobilops — white
Zonitoides arboreus
Vitrea hammonis
Pyramidula perspectiva
Helicodiscus lineatus
Bifidaria contracta
crossed large peat-bed areas
now drained and farmed.
The brown peat is everywhere
in evidence. (see sample)
A young Norwegian farmer just
S. of Burdick's Island was
cutting millet on peat. It was
good where slight swell gave
drainage.
These beds were formerly
great sloughs, — now all drained
into Beaver creek
used for hay or farming, or pasture
The young Norwegian also raised
flax & rye — both fair.
Walked up to Burdick's Island.

Rice Lake has been drained in part only & the result is a mess. On the south side there is a pool of open water about 1/8 mile long & several rods (8 or 10) wide. The rest is rice, etc. & the whole has a stagnant look. Found only a few old shells.
Anodonta grandis
Planorbis campanulatus
" trivolvis
Lymnaea:

Slime molds were abundant in woods near lake, also some fungi. Hard maple & white hickory are also abundant.
So are mosquitoes everywhere!
Found quite a lot of almost ripe plums & also some grapes, few but large.
Saw a number of large trees of Prunus virginiana - more than 6 in. in diam., & evidently over 25 ft. high. Fruit large and abundant.

Returned to Joice, but freight was so late that I took the evening passenger for Mason City. Packed stuff. Shipped basket (or rather prepared for shipping) and also packed my stuff expecting to leave at 1:02 a.m. on the Chi. Gr. W. for Ft. Dodge, but the bus didn't come and I went to bed.

Sep. 1, 1912, Sunday

Spent forenoon in mounting slime molds, cleaning shells, etc. At 2 P.M. took car for Clear Lake. Visited there until 9 o'clock, then returned to Mason Cy., packed basket, also my belongings. Wrote letters. Sat up until train time.
Left at 1:02 a.m.
Rainy rest of night.

Sep. 2, 1912 Mon.

Reached Ft. Dodge in rain & hurried to Ill. Cent., which was 20 min. late.
Reached Storm Lake at 6:15 am.
Had breakfast at Bradford Hotel.
Went along north shore of Storm Lake & found:

1 Unio luteolus (liv.)
" mississippiensis
" rubiginosus
Anodonta grandis
5 Sphaerium sulcatum
" striatinum (?)
Pisidium ——
Amnicola cincinnatiensis
Bythinella obtusa
10 Valvata tricarinata
Lymnaea palustris
" caperata
" desidiosa } Living
" humilis } Living
15 Physa obesa } Living
" gyrina } Living
Planorbis trivolvis
" bicarinatus
" deflectus ?
20 " parvus
Segmentina armigera
Succinea retusa
Bifidaria armifera
" contracta

all except those marked "living" are from beach drift.

Storm Lake is a roundish lake said to be 20-25 ft. deep, with no high hills or bluffs, — hence exposed.
The beach on N. side is largely sandy or gravelly, but there are many blue green algae in water & it looks foul.
Catch many carp.
The shores should be fenced to keep out stock & they should be improved, & lake dredged. Would make a beautiful body of water.
Storm Lake is a pleasant town with very wide streets & nice home like residences.
Returned to hotel for dinner and at 2:25 pm. left for Cherokee.
Sky partly clear, — breezy day. Quite warm.

At 2:25 PM. I left for Cherokee. Reached it about 3, walked along the Little Sioux river. Picked up drift shells in sand:

- ✓ Sphaerium sulcatum
- ✓ " striatinum
- ✓ Pisidium —
- ✓ Amnicola cincinnatiensis
- ✓ Bythinella obtusa
- ✓ Campeloma
- ✓ Valvata tricarinata
- ✓ Pomatiopsis lapidaria
- ✓ Physa integra
- ✓ Lymnaea caperata
- ✓ Planorbis parvus
- ✓ Segmentina armigera
- ✓ Gonatogyra deflexus
- ✓ Succinea retusa
- ✓ Planorbis bicarinatus

On bars I also found:

- ✓ Unio pustulosus (common)
- ✓ " rubiginosus
- ✓ " lachrymosus
- ✓ " undulatus
- ✓ " parvus
- ✓ " rectus
- ✓ " ventricosus
- ✓ " luteolus
- ✓ " gracilis
- ✓ " mississippiensis
- ✓ Anodonta grandis
- ✓ Margaritana truncata
- ✓ " complanata

Among drift wood — partly living & partly dead. (on bottomland in woods among soft rubbles):

- ✓ Pyramidula striatella
- ✓ " alternata
- ✓ Polygyra leai (living)
- ✓ " profunda
- ✓ " multilineata
- ✓ Zonitoides arboreus
- ✓ " minusculus
- ✓ Vitrea hammonis (living)
- ✓ Pomatiopsis lapidaria
- ✓ Carychium exiguum
- ✓ Succinea avara (living)
- ✓ Bifidaria procera (")
- ✓ " armifera
- ✓ " contracta
- ✓ " pentodon
- ✓ " holzingeri
- ✓ Euconulus fulvus (living)
- ✓ Helicodiscus parallelus (some living)
- ✓ Vallonia parvula
- ✓ Cochlicopa lubrica (living)
- ✓ Limax campestris (living)

Dredged (in river):
Calyculina transversa

Returned to Storm Lake (left at 7:05 P.M.) and spent night at Bradford Hotel.

Sep. 3, 1912 Tuesday

Left Storm Lake for Sac City at 7:25 AM.
Sky somewhat cloudy, & wind rather strong. Promises a good day.
Rained when I reached Sac City.
Went up the river a total of 1½ miles collected first just below dam.
Picked up shells on sand bars, collected live clams, & also picked up a few pond shells & land shells on bottoms.

Below dam found:
Ancylus
Physa integra

In pond along RR.
Physa gyrina
Lymnaea [illegible]

In river & bars;
Unio luteolus
" undulatus
Margaritana complanata

also on shore:
Unio parvus
" [illegible]
" [illegible] (2)
" gibbosus
Anodonta grandis (2)
" ferussaciana
"
"

See section page following

Saw at Sac City – on bottoms chiefly –

Crataegus mollis
" punctata
Tilia americana
Juglans nigra
Ulmus americana
" fulva
Q. macrocarpa
Q. rubra
Vitis vulpina
Ribes gracile
Salix nigra
Fraxinus nigra
" lanceolata
Carya amara
Prunus virginiana
Sambucus canadensis
Salix amygdaloides
Celtis occidentalis
Soft maple
Ostrya virginiana
Acer negundo
Viburnum lentago
Populus tremuloides
Zanthoxylum americanum
Rubus occidentalis
Prunus americana
Rhus glabra
Smilax hispida
Gymnocladus / Kentucky Coffee Bean
Populus / Cottonwood
Salix longifolia

On sand bars

Amnicola cincinnatiensis
Valvata tricarinata
Sphaerium striatinum
" sulcatum
Pisidium —
Segmentina armigera
Planorbis campanulatus
" trivolvis
" bicarinatus
" parvus etc (see box)

Under sticks & logs on bottomland.
Succinea avara
Zonitoides arboreus
" minusculus

Returned to Sac City & took dinner at the Park Hotel. Left for Lake View at 1:20 PM (late) & reached Lake View at about 2:00.

Worked along NW. shore first & found Anodonta grandis & Unio luteolus. Also a few smaller shells. Then went around upper end of lake to NE & N. side, as far as to Lakewood resort. Thousands of Anodonta grandis are thrown up.

At N. end of Wall Lake
near Lake View —

Anodonta grandis
thrown on beach in great numbers — dead.
Unio luteolus 2
" menisphaerium — 1.
" parvus
Amnicola cincinnatiensis
Valvata tricarinata
Sphaerium striatinum
"
Lymnaea —

Planorbis campanulatus
" trivolvis
" bicarinatus.
Polygyra monodon! (found two living near Lakewood summer resort)
Physa integra
" gyrina

A man who lived here more than 30 yrs. said clams were never thrown up in such manner before.

around wall lake almost no timber, just here & there a fringe.
The resorts all have artificial groves.
Natives:

Cottonwood / Poplar
Salix discolor
Amorpha fruticosa
Q. macrocarpa
Salix amygdaloides
Vitis vulpina
Prunus americana
Box Elder (native?)
Soft maple (?)
Apocynum androsaemifolium
Salix longifolia
Fraxinus v. lanceolata (native?)

Helianthus maximiliani is common & in full bloom.
H. grosseserratus is in very fine flower.
Returned & took supper at the Windsor Hotel at Lake View.

Left for Carroll at 7:40 pm & reached Carroll at 9:20.
Put up at Burke's Hotel.

Sep. 4. Wednesday

Train on C. Gr. W. was 2 hrs. late. Left 7:30 for Botna.
Day fairly clear.
Reached Botna at about 9 & found Mr. Collin Campbell (cousin of Miss Myrtle C.) at depot with Emma & Joe & an auto.
Visited Emma's neat little home until 2 pm.
Drove over to Miss Myrtle C.'s home for brief visit.
Took train at 2:15 pm (about an hour late) for Harlan.
Put up at the Harlan House and at once went to Court House and corrected road map.

The Deputy auditor (Sam Dowell?) was a student at SUI for a year 1904-5
After supper visited Ed. Mrs White at his home. He lives with his father-in-law, Dr. Cobb.
Packed late & mailed

Sep. 5 - Thursday

In morning shipped outfit, visited Will Shepherd; & took C. Gr. Western train for Manning.
Train left at 10:05 - 40 min. late, could not make connection for Audubon -
Worked S.E. of Botna.
Took train P.M. (1:20) for Council Bluffs.
There changed to CB&Q & left at 3:55 P.M. Changed at Pacific Jc., leaving at 5:20.
The bluffs from Council Bluffs to Pacific Jc. are greener than usually at this time of year.
The bars below Hinton's showed clouds of dust.
The river has been cutting in on R.R. badly here.

The following brief notes refer to grasses of various points seen while day light.
Glenwood - timber - good.
Malvern - a mile or two west & N. of track in good patch of timber. Also creek west.
Red Oak appears to have wood N. & west of all.

Reached Chariton at about 10 P.M. and put up at the Bates House.
No water reached my room, & in morning the clerk carried water in pail.
Prof. Tilton came in on same train, - as I discovered at hotel. Prof. Kay and Mr. Dick were at the hotel, but I did not see them until morning

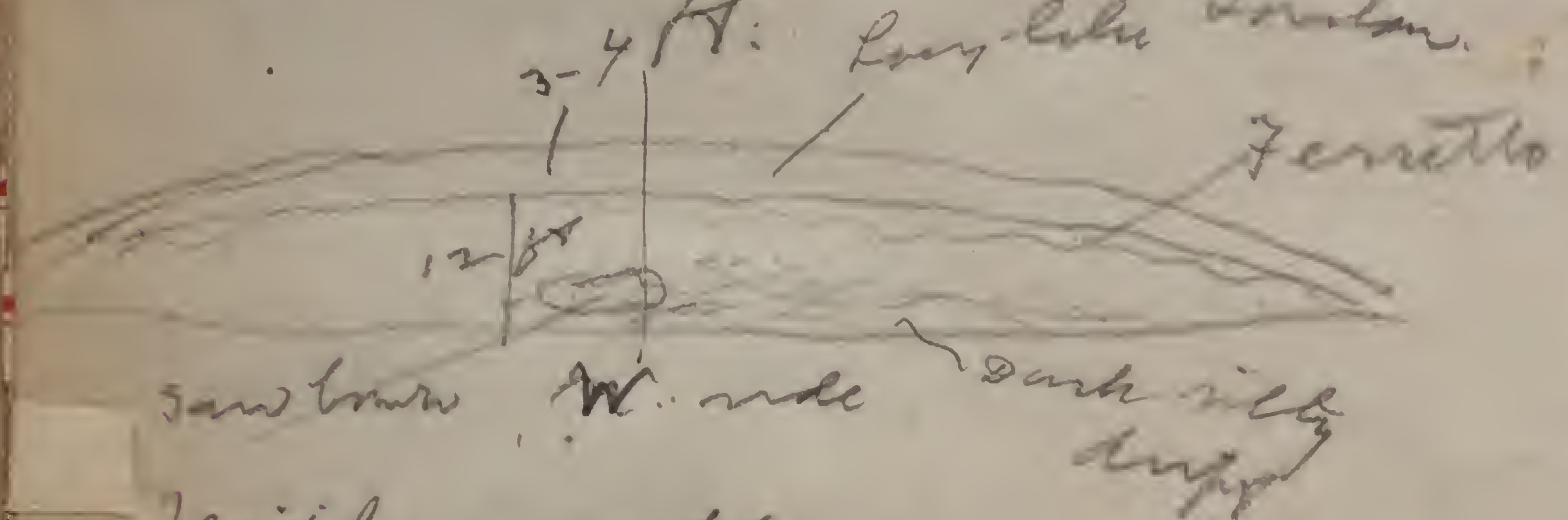
Sep. 6 – Friday 1912.

Arose at 6 am Chariton

Went out along new C.R.I. & P. with Kay, Tilton & Dick by auto.

at N. line of sec. 23, English Twp.

The cut is



Within upper.

In a rather dark stratum of somewhat silty drift there are many fragments of shells, Sphaerium, Physa & Lymnaea were identifiable (see shells)

Cut is about 170 yds long

Level is a little s. of middle so that cut is largely in sea. north. drift

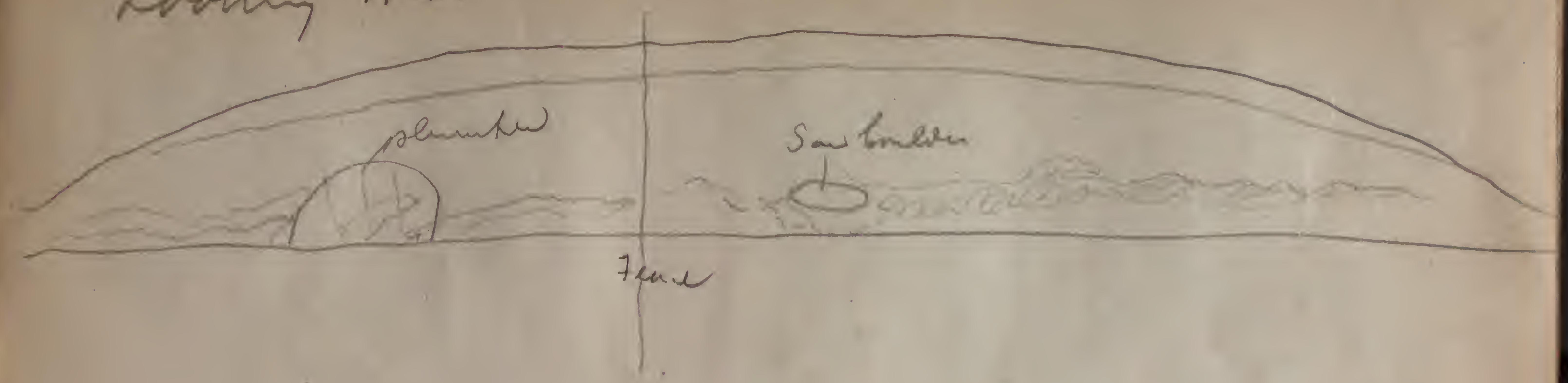
The silty parts in the lower 4 or 5 ft for at least 50 yds n. of level. It contains pebbles & is jointed (see spec.)

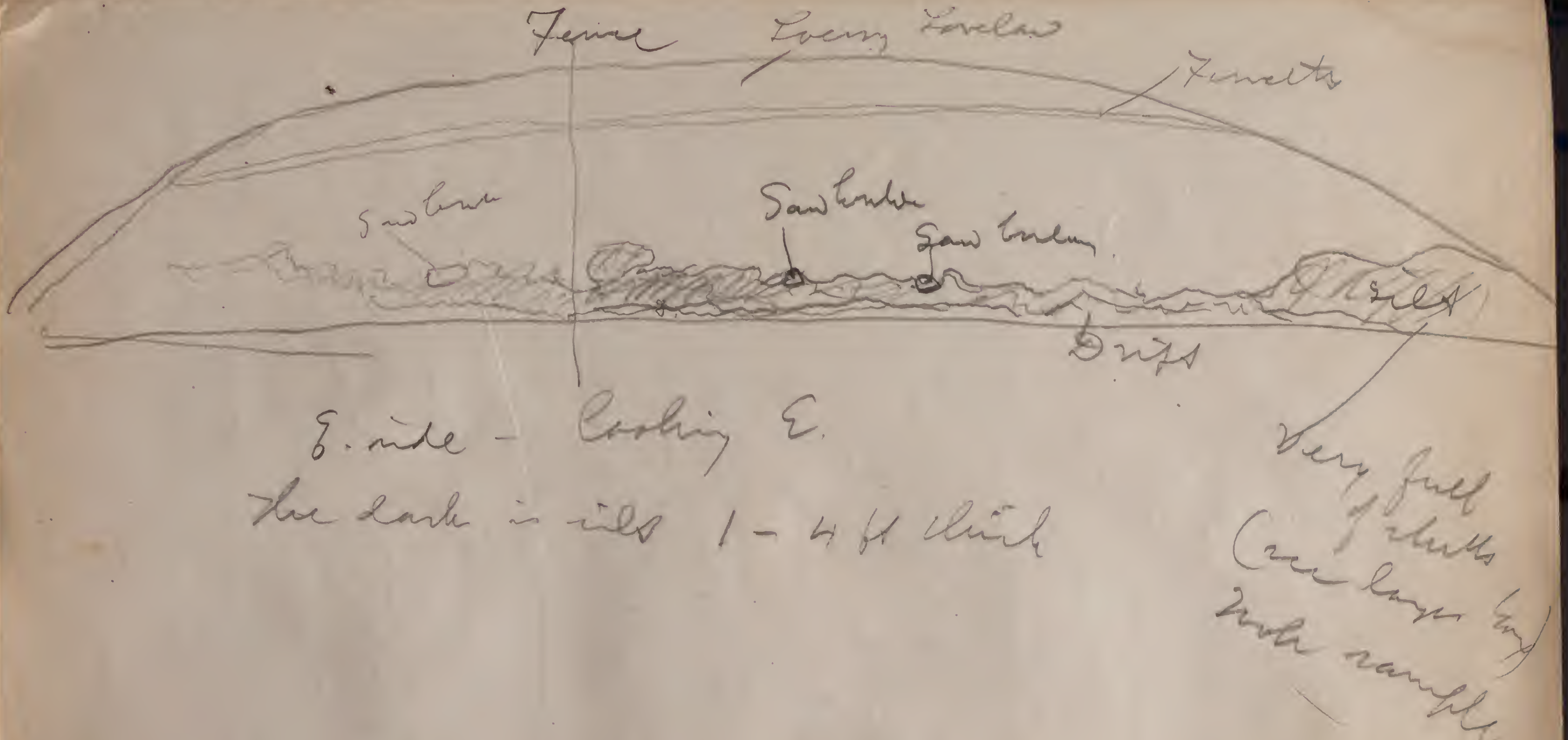
Shells are found on both W. & E sides (main one from W.) & also south of sec. line.

The Loessy stuff is sandy in lower 1 ft. & all contains a few small pebbles.

The silty material is mostly not thick & irregular as if pushed & gouged on both sides.

Looking West   W. side



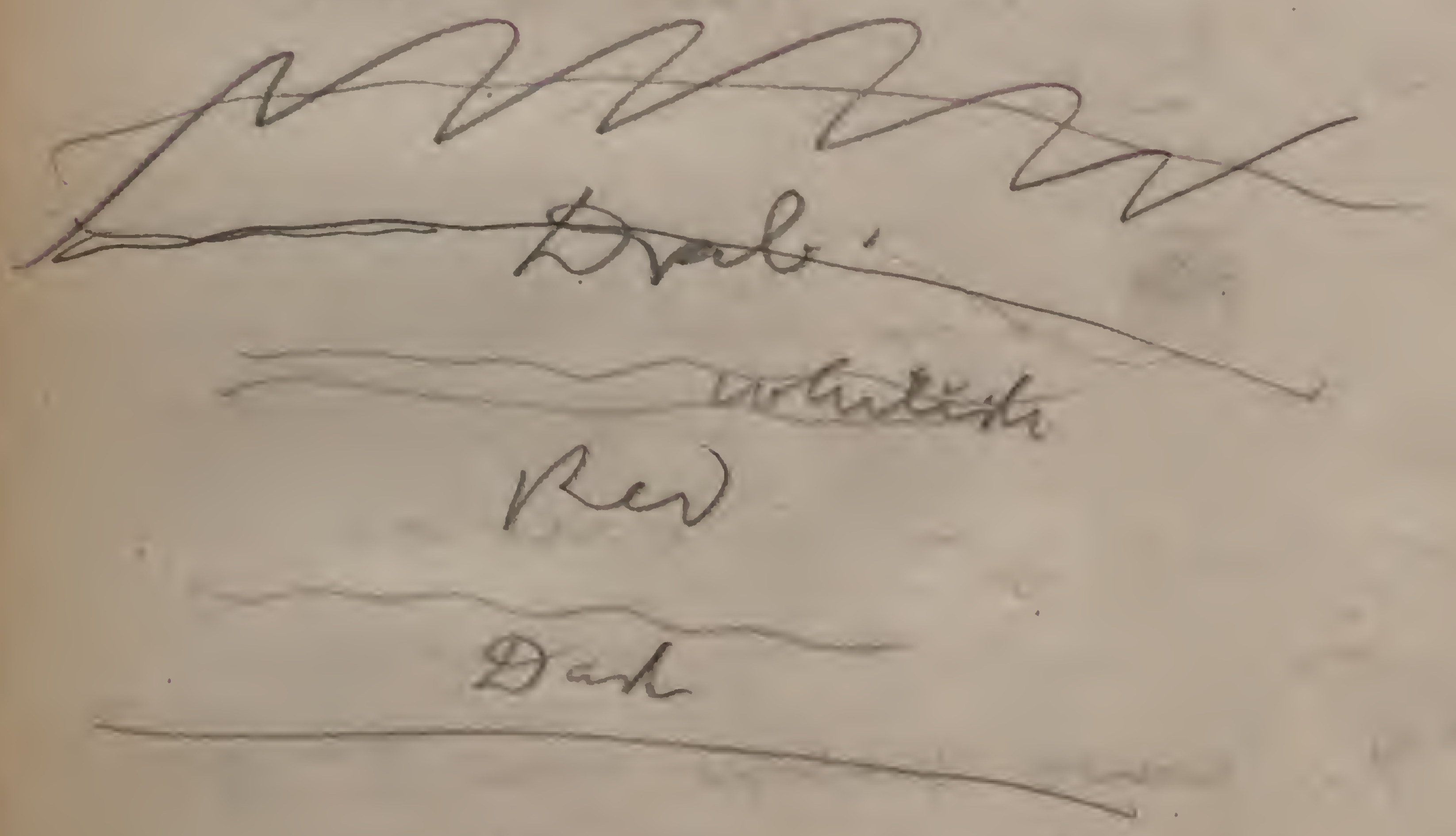


E. side - Looking E.

The dark is silt 1 - 4 ft thick

Very full of shells (see larger bag) took sample

Near N. line of sec. 10
Lincoln Twp. There is
a deep cut showing
4 or 5 ft. of dark
blue joint clay (see
sample) & above
red Kansan & then
a white clayey joint
stratum then the dark
silty drift almost
without pebbles



the 1st cut out of Clinton
across the White Breast, in
N part of sec. 15
This is a low cut with its
S end (on S E side) with the
same gray silty stuff, increasingly
mixed with drift, in which a
few shells are found.
The cut on N. side is very low

Drove in for dinner, & after
dinner went S. along the
C.R.I.&P. (about 10 mi.) where
several cuts show — in
on Kansan, with white tough
clay above & above that
oxidized sandy, etc.
evidently water
In this cut on E side there
is some gravel (Buchanan?)
fine — above Kansan —
In cuts below the gray
joint "modified Kansan"
shows in same position —
all water lain

came back to C.R.I.&P.
cut at Q. crossing in
character. This is about
30 ft. deep & shows
yellow Kansan below,
then a gray joint clay
with few small pebbles, &
then a joint clay without
pebbles (gray) running
nearly to top, – the
latter evidently also
water-lain.
There is no loess here and
the upper materials are
to be classed with Loveland
and Buchanan.

In some of the cuts seen
this a.m. the lower Kansan
is very dark – almost like
Nebraskan, – but with coarse
fracture, & one cut shows
the yellow & ~~black~~ Kansan

intergrading. The latter
also has sand boulders, –
some large.

These cuts show distinct
deposits above Kansan which
have every appearance of
being due to water action.
The gray deposit with
pebbles (few & small), jointed,
and mucky, forming "hard-
pan", are very similar to
the upper deposits at Sioux
Falls, – as in Pit S.W. of cuts
1 & 2 along Ill. Cent.
This gray stuff is here
spread on highest tablelands, –
these upper plains being
quite flat. Was it formed
on ^outwash^ plains similar to those of
the Wisconsin? It evidently
closely followed the Kansan &
should be associated with it.
It is very similar to my
"modified Kansan" in some of

The cuts in the Sioux Falls region

The upper yellow (rusty) Kansan contains bowlders, some quite large ~ 4 ft. diam., and has many nodules. It contains rare bowlders.

The lower very dark sticky, tenacious drift is sometimes quite sharply separated from the upper, but in at least one of the cuts there is more or less intergradation between these. The dark stuff resembles Nebraskan, but has a coarse fracture.

How close is the relation between all this dark lower Kansan and the Nebraskan?

Take this up in field.

Lucas county farm homes are not very attractive for the most part, — run down & dirty.

Spent from 5:15 p.m. until 7:00 along the Chariton river, S.W.

The stream is little more than a string of nearly stagnant, scum-covered pools connected by streamlets. The bottom is very muddy.

Collected in river:

Anodonta grandis
Sphaerium striatinum
Calyculina transversa (diving)
Ancylus rivularis "
Physa —— "

Under a log on bank:

Limax campestris
Zonitoides arboreus.

Packed in evening and prepared for next days work.

The hotel (Bates House) has had no water upstairs on account of shortage in town. What would they do here in Chariton in case of fire?

Sep. 7, 1912 — Saturday

Left Chariton for Indianola at 5:45 am

Met Prof. Tilton at Indianola and we took C.R.I.&P. train at 7:25 am.

On way to Indianola:

Oakley — rough, with some groves nearby; Looks promising, especially N.W. Seems to be both upland & bottom timber.

Fairly good prairie along RR just N. of Oakley.

Lacona — Before reaching Lacona saw wooded bluffs & slopes to east. Looks well. These seem to be not over a mile E. of Lacona & extend southward parallel to R.R. For woods this looks better than Oakley. There is also a wooded slope west, ½ mile or more.

Milo — Up to Milo not promising. — Beyond it also is poor.

Ackworth — Toward Ackworth (near it) the woods again appear more abundantly, along stream. Probably a mile S. of Ackworth.

Indianola —

Stopped off at Indianola with Prof. Tilton

Went to old brick yards, just west of Standard Oil tanks in S. part of Indianola.

Took sample 2½ ft. below surface. This is "Columbian" yellow, but otherwise like post Kansan loess. It is evidently the weathered loess of post Kansan type.

Down about 6 ft. below the surface (& about level where fossils sent by Prof. Tilton were collected 20 years ago — this is only a rod S.E. of point where I am at work taking samples) the loess is more nearly typical of Kansan — with some iron streaks & cloudings in this part. Prof. Tilton says lower part was free from iron.

Took sample of loess at 6 ft. below surface.

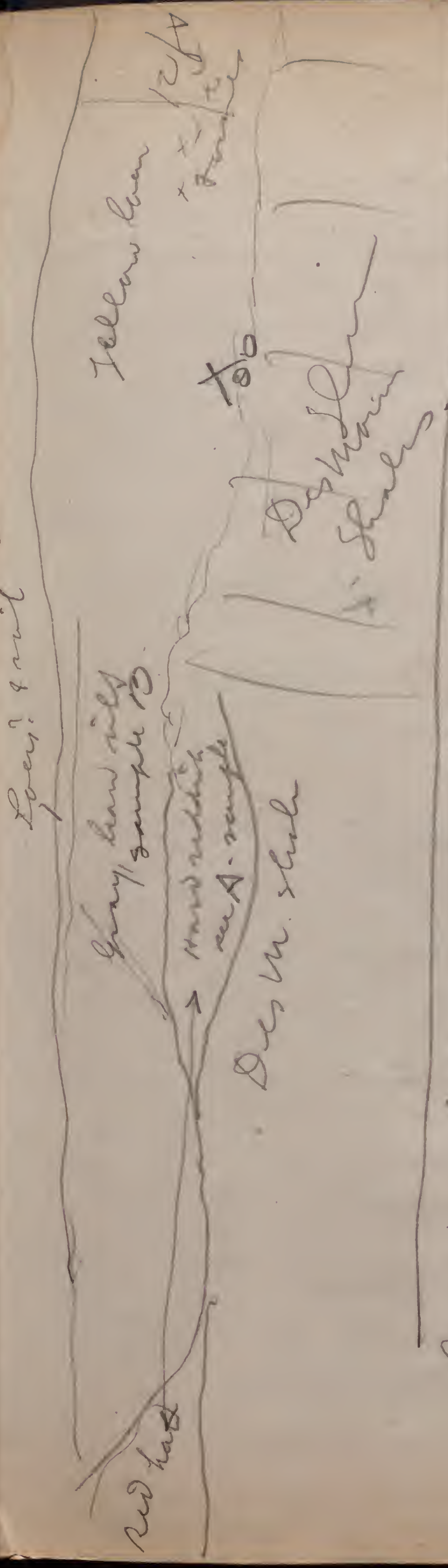
Drove out S.W. - at turn
in road where latter turns S.
to water works, opposite
Mr. Richardson's house,
a bank about 5 ft high
along road, slumped.
Dug into it & found
a yellow colored material,
very likely not loess.
(See sample.)
About 25 rds farther S.
the bank is higher, & cut in
just above Kansan.
It is still colorless - the
sample is 4 ft. below
surface, & I think not
loess. Too muddy, heavy,
with coarse joint cleavage.
Went to river where it
made a new cut off, &
took sample of material 7 ft.
below top. This is black,
jointed, & slumpts along slimy
surfaces. Took another sample
at 9½ ft. This is bluish

mostly, looking like Kansan,
jointed, but no pebbles.
It was also laid down by
water. See sample.
Collected a few shells &
slimemoulds under logs
in wooded river bottom.
Shells:
Kansan Zonites arboreus
Limax campestris.
In river:
Anodonta grandis (juv.)
Took dinner at hotel with
Prof. Wilson & at 1 P.M.
started for Cedar Valley.
Reached Cedar Valley at about 1.50
walked a mile up the track
along the C.R.I.&P.
On west side there is a long
cut, now badly slumped, but
about 12 ft is exposed near
N. end.
This is yellow loess, quite
compact, with rounded (mostly)
nodules (one had shells), breaking
vertically. The latter yellow

loess with many fossils
(See collection, sample,
& nodules)
Took specimens mostly at
about 6 to 10 ft. below
top.

Down toward S. end
of cut gray part
Kan loess only
appears — the lower
4-6 ft. compact,
breaking vertically into large
blocks & fossiliferous —
The upper 5-6 ft is
yellower, tubular & probably
only weathered part Kan.
See sample of upper
also fossils

N. end



For one place at about X a little drift
appears below the hard rib. In most
places the loess rests on ribs & in some
places on Desmoin shale.

Prof. Tilton left for
home at 5 + P.M., &
I rode into Des Moines
in buggy with a man.
Took 9 PM train for
home.

Sep. 21, 1912

Saturday.
Went to Muscatine leaving at 2:30 a.m. & going by way of Wilton.
Drove from Muscatine to Wyoming Hill. Collected mosses, lichens & snails.
Also went up Sweetland creek & found Aster macrophyllus & Physostegia hexagonostem[?]. Also mosses & lichens.
In afternoon drove to woods 7 mi. SW of Muscatine. Collected Polygonum articulatum, P. clavum & Mimosa dis[?] contorta[?].
Returned to Muscatine & left for home at 8:19 pm.
1 hat Ottie Snyder's team & 3 rentals = $4.00
Misses Steward, Frazier, Friedman & Hudson were along.

Sep. 28 - 1912 Saturday.

Planned to go to Homestead but it rained all forenoon.

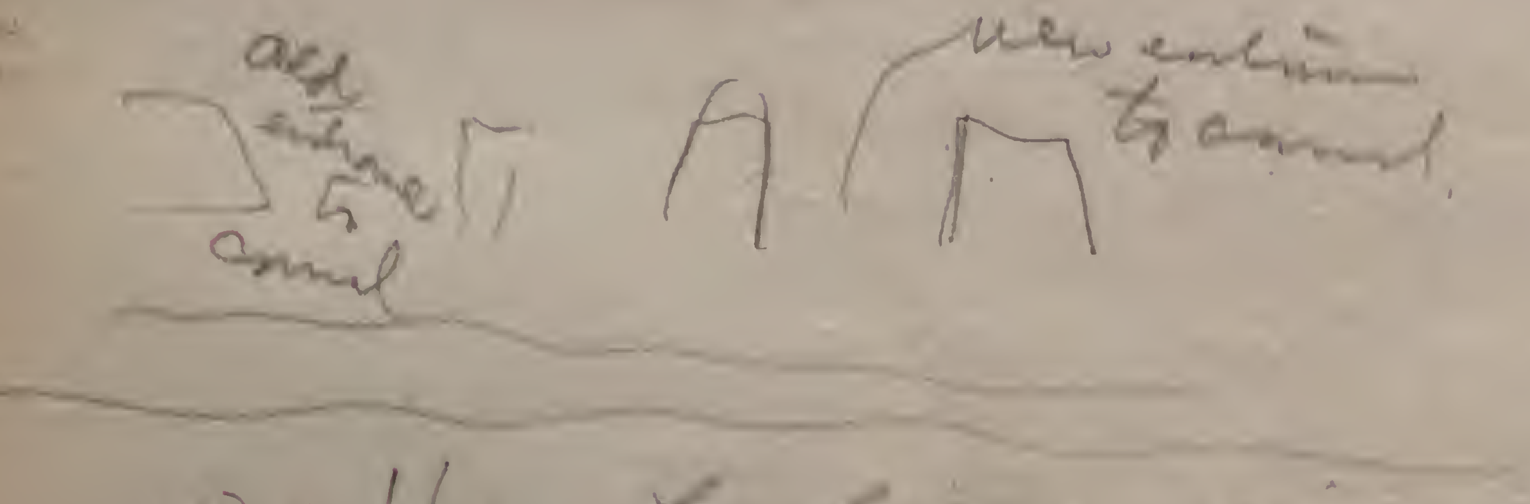
Oct. 1. 1912 Tuesday.

Went up in afternoon with Misses Cavanagh, Steward, Friedman, & Frazier to Conf[?].
Miss Cavanagh found Asplenium platyneuron. We found several.
Also collected Adiantum, Asplenium filix femina, lichens, mosses, diatoms, fungi, slime molds (only few), etc.
Saw a good many Zebra[?] under logs.

Oct. 5, 1912, Saturday

Left Iowa City at 2:45 am
for West Liberty.
Thence to Keokuk at 4:45
a.m.,
Reached Keokuk at 10 am
(late) & put up at
Keokuk Hotel
Went up river & took
photos of works.

3 & 4 looking up river



15 & 16 Looking up river
along W. side – shows
retaining wall. I took
picture from top of same
wall where it angles S.E.
The RR will run along
level of top of wall.

23x Looking E. of N. along
old canal

24x – looking N of E. at upper
end of lock system.

Collected Mesodon & Pyram.
alternata & some Pol. monodon
under stones, sticks, etc.
on bluff North.
Also papaws.
Went back up hill
into Rand Park.
A fine view.
Took a short walk down
the river & found a few
shells.
Returned to hotel & left
call for 12 midnight,
expecting to go to St Louis
at 12:45 am.

Below depot the limestone
is capped with a thick bed of
very bouldery drift. Along wagon road
N. of Rand Park school I picked papaws the
drift is blue (Kansan) below & yellow above (Illinoian) There is possibly Iowan? too.

(yellow etc. / blue)

Oct. 6, 1912

The call failed, although the elder night clerk had been especially told that I would be hard asleep & there should be no doubt about my being awakened.

I had breakfast, 40 cts & sent telegram to Mr. Bell 25 cts. & will have to take dinner on train (about 50 cts) Mr. Bateman, the manager, paid this, total $1.15

Left Keokuk at 9:25 a.m., - 35 min. late, and reached St. Louis at 2.50 p.m., - also 35 min. late.

Met Mr. Kučera at depot & hurried to Hall where a good audience was gathered.

Spoke in Bohemian. Met Mr. Klobasa, the Čejkas and other old friends, Mr. Bell, & Mr. & Mrs. Baloun, Mr. Šery, the last of the charter members

of Lodge Missouri 2, ČSPS Mr. Roth another charter member was buried only a few days ago. This was 50th anniversary of Lodge Missouri.

Went to Mr. Bell's house for supper & met Mrs. Bell & their oldest son. Another son, Mr. Louis J. Bell, is an assistant in chemistry at Columbia (State University). Met him for a while in afternoon.

In evening spoke to an immense audience which packed the large hall.

Spoke at first for a little while in Bohemian & then an hour in English.

Spent night chatting with friends, & went to depot at a little after one o'clock with Mr. Zitl, a pupil of Šefčík, and Mr. Vondráček. The latter is an interesting individual. He is a young man who speaks with

a strong Irish accent, having grown up among the Irish. He speaks little Bohemian, but seems to have considerable Bohemian sentiment.
He was in Ottumwa, Ia. where he learned the chiropractors art, — at least to some extent, and it is his favorite subject for conversation.
Left St. Louis at 2.35 am for Montrose. Reached Montrose Ia at 8 am, & put up at hotel. Oct. 7, 1912
Walked along shore & picked up Unios (also at button cutting factory.) & small land shells.
After dinner walked down river, but first went into woods (S.O.) & found land shells, rock lichens, many

ripe pawpaws, some Asters, etc.
Then walked down along bluff where wagon road is being built.
Found Aster & Solidago, & a buckeye. Also found Polygyra albolabris, P. exoleta, P. profunda, Mamoryclis [illegible]
Then went along shore more than half way to Galland & picked up more Unios.
As I recall them I found following:

Unio alatus
" laevissima
" gracilis
" gibbosus
" crassidens
" rectus
" anodontoides
" securis
" elegans
" coccineus
" plicatus
" multiplicatus
" mississippiensis
" ellipsis
" trigona
" coccineus

Unio aesopus
" retusus / ebenus
" rubus
" ventricosus
" ovatus
" ligamentinus
" tuberculatus
" verrucosus
" pustulosus
" lachrymosus
" metanevra
" pustulatus
Margaritana complanata
" confragosa
Anodonta edentula
" grandis

The papaws are very abundant and are mostly just at their best.

The button men do not want the purple-nacred forms like U. crassidens, U. gibbosus, U. verrucosa & U. alatus; nor the thin-shelled forms like U. gracilis, U. laevissimus, U. complanatus, the Anodontas & the Margaritanas; nor the small ones cutting only one button, like U. coccineus.

The bottom between Montrose & Galland is said by the clam fishermen to be rocky (with some mud) for the most part. They must use rakes here, the gas-pipe & hooks drag being usable only where there is a sandy or muddy bottom. Clams are growing much scarcer.

"Niggerheads" (U. ebenus) are most highly prized and bring $28 per ton.

The fisherman whom I saw come in had worked all day and said he had about 480 lbs. of shells in his boat, of which 90% were "niggerheads". They boil these in rather shallow tin vats under which they can build a fire.

Among the shells which my German clam digger gave me were a gravid U. securis and a gravid U. ellipsis.

Oct. 12, 1912 Saturday.

Left at 8:35 a.m. for Adams, Misses Cavanagh, Frazier & Friedman were along. Walked to Bayfield by way of skunk cabbage bog.

Collected lichens & mosses on sandy bank (facing N. for most part).

Wild grapes are very fine & very abundant (on low spreading vines along RR) all along.

Saw Opuntia in fruit.

Stopped at sandy flat just E. of Cedar river bridge, & saw following plants:

Selaginella rupestris	Eragrostis pectinacea var.
Opuntia humifusa	Achillea millefolium
Asterella —	Oenothera oakesiana
Tylostoma —	Polygonum tenue
Bouteloua racemosa	Panicum scribnerianum (?) ([illegible]?) —
Antennaria ~~canadensis~~ candida (?)	Asclepias verticillata
Erigeron annuum	
Rhus trilobata —	
Physalis [illegible]	

Stopped at sphagnum bog & collected mosses & Miss Friedman collected diatoms along sandy bank W. (in pools due to seepage). Russula emetica was very abundant and I also found Russula —

Collected Elodea in skunk cabbage bog. Miss F. took sediment but found few diatoms in it. I have always found the Elodea from this place very clean.

Made the 4:52 pm. train for Iowa City, — by hurrying.

Oct. 14, 1912 - Monday

Took short trip to Irish's woods in afternoon with Misses Cavanagh, Frazier & Friedman. Saw small fruited haw in Irish front yard. Miss Irish says this was brought by her father from Illinois. They had a hedge of it, but this was cut down & they saved this one tree.

The leaves are small & 3-lobed & seeds 5. Fruit small & soft.

Went back to Crataegus place. Few fruits appear & leaves are all off.

Black haws not abundant & most of them ripe. One tree had some green ones on.

Oct. 19, 1912 - Saturday

A cool clear morning. Left at 5:10 A.M. for Cedar Rapids & Amana. Misses Cavanagh, Campbell, Frazier, Friedman, Cotton, Schenck & Schoderman were along.

Spent part of forenoon visiting Mr. & Mrs. Schadt and the woollen mills. Followed entire operation from sorting (all by hand) through cleaning, dyeing, carding, spinning and weaving. Walked to river, & worked on bottoms w. of road, getting fungi, slime moulds & a few snails.

Went to S. side of river & worked along bluff west of bridge. Found many lichens, mosses (very fine) & fungi.

Then walked to Dutch Lake where we found mosses, liverworts, fungi, etc.
Then returned to open prairie patch around pond on hill S. of bridge & looked into maple woods east.
Walked to Homestead & ~~took~~ supper at hotel.
Found an unusual number of rowdyish small boys at depot. Smoked, swore, & used foul language.
Were these colony boys?
It doesn't seem possible.
Left at 9 pm.
Train late.

A beautiful, clear day.

Oct. 22, 1912 - Tuesday

Left at 12.08 pm. for Homestead.
Misses Cavanagh, Freedman & Frazer were along.
A cold, blustery cloudy day

Oct. 26, 1912 Saturday

along road S. W. of Mt. Vernon about 1 mi. (E. side of sec. 16) there is a bank of yellow loess, about 6 ft. exposed. No [illegible] or shells. See sample

about 1/2 mi. farther another small exposure, about 4 ft. — Same kind.

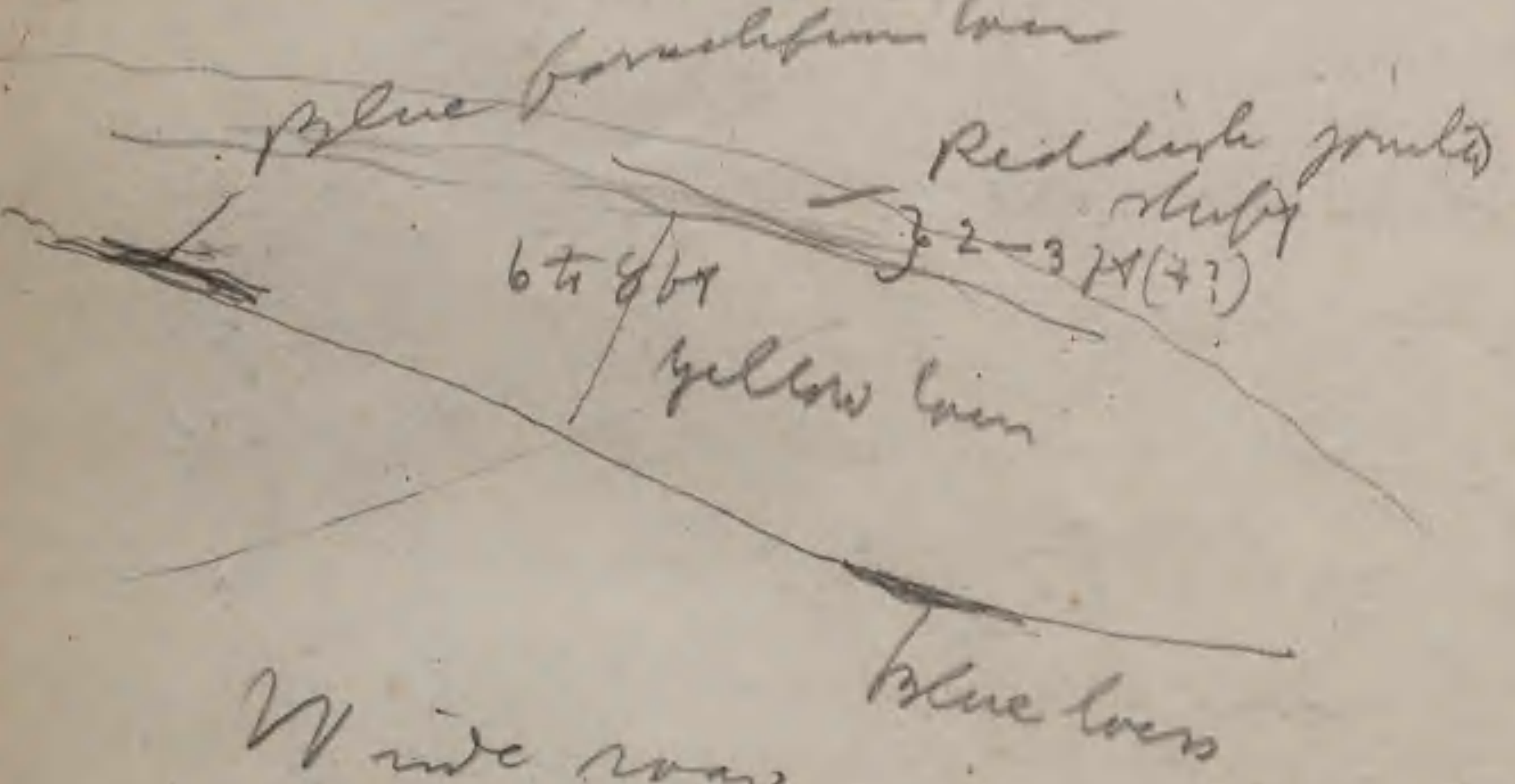
collected Physa & Lymnaea in creek near [illegible] farm.

S. of bridge the road cuts into hill & shows drift below & some yellow loess above

S. E. of bridge two loesses show, — the lower blue is [illegible] down near level of bottom. Has tubules (see sample). Upper is yellow & is probably at least 8 or 10 ft.

Upper stuff looks more like drifty — not loessy —

The road slopes about
20 ft in 150 ft.



W side road.

The blue fossiliferous loess
has iron streaks, horizontal, &
cloudings & parts are clean
blue. Shows cleavage
(horizontal) no nodules.
Fossils scattered.

Collected Zon. minuscula, Z.
viridula, Z. arborea & Limax
at Greenline bridge near bog,
S. side river.

Drove west along N side of
river, on W. side of no. 19
from end where road runs
up hill. About 6 ft. exposed
This is yellow crumbly stuff
that looks like loess but
does not break like it
It seems to be sandy.
See sample

Along 8th. ~~[illegible]~~ of no. 12 along road
the banks on S. side (facing
N.) are covered with mosses, etc.
The road to the Palisades is
in very rough country from
this on.

Put up team at livery barn,
got bread, & went across river
to Palisade cliffs. Collected
mosses, lichen, liverworts, &
a few flowering plants (Saxi...,
Campanula rotundifolia, Pellaea,
camptosorus, etc.)

Endocarpon made face of bluff
scabby in some places &
Placodium paints the cliffs
yellow. This occurs in a belt
about 2/3 way up cliff.

Found a few shells on leafy
slopes. Picked up largest (dead)
Campeloma subsolidum I ever saw.

Returned & noted following shells on sand bar:

Unio ventricosa
" ligamentina
" gracilis ~~[illegible]~~
" rectus
" plicatus
" undulatus
" trigonus
" alatus

Anodonta edentula

Returned to Mt. Vernon leaving at 7:30 pm. & reached Cedar Rapids just in time to take 8:05 pm. car.

Nov. 14-1912

Left Iowa City at 11:30 pm. & reached Cedar Rapids at 1 am.
Put up at the Allison.

Nov. 15-1912

Left with ~~Irwin~~ at 6:30 via Ill. Cent.
Reached Earlville at 9:20 am.
Went north from Earlville to Almoral (drove) Just N. of track there are swamps. took bottle (1) & Physa from pond or bank near road.
In creek ½ mile E. of Almoral got bottle (2) of diatoms.
Sandy creek with the stuff at edges.
Drove to Irwin's farm & put up team. Visited grove (undisturbed) near house & collected lichens on old pine board fence.
Went to Plum creek bluffs N. of house & collected lichens & mosses.
The limestone is mostly yellowish magnesian?

~~Plum creek~~

~~[illegible]~~

~~[illegible]~~

After dinner walked along Plum creek out of town & collected lichens, mosses, & liverworts and a few fungi. Collected both rock & tree lichens,

Got bottle of diatoms in quiet place in Plum creek at bridge just N. of Irwin's home. (Bottle (3))

Went back to Earlville at 3 pm, & ~~took~~ train at 3.30 for Charles City

The country around Earlville, especially N. & E. seems to be gently rolling Iowan, just N. of Earlville, & a little N.E. along Plum creek there are rougher places.

There is quite a grove (native) NW. of Almoral on the Great western, there are other groves along ~~Plum~~ Plum creek which seem to be but remnants of a larger forest.

The forest trees noted ~~at the~~ Irwin's place N. of Earlville, & in that vicinity, were:

Met A.O. Thomas

Drove south to cut along RR, (Interurban) - Found here what looks like weathered gray Kansan at base with few boulders (small,) above them is a band in which there are large boulders. This belt (Thomas says) is in places mixed with Buchanan gravel & boulders clearly resting on & plowed into gravel) looks as if it might be Iowan. On it there is a stratum of soil, etc.

In the ~~Kahnle~~ Kuhnle quarry there is limestone, then 2 or 3 ft. of a bluish joint clay with few pebbles, a line of boulders (partly local limestone) 2 or 3 ft & then a thick (5-6 ft) bed

of rusty gravel & sand (Buchanan?) Above this in places wind blown laminated sand.

Second layer is much like first, but a sort of ~~ferrett~~ layer is between them

mixture 2 or 3 ft

Sand & gravel 5-6 ft.

2nd drift 2 or 3 ft

— oxidized gravel, etc

1st drift 2 or 3 ft.

Cedar Valley limestone
Kuhnle quarry

Lines are horizontal

1st & 2nd drift are not in all cases clearly defined, especially eastward, The 2nd drift? shows nearly horizontal streaks & bands alternating bluish & rusty, Doesn't look like ordinary drift

collected mosses & Marchantia
Drove N.E. – Country is
rolling (rather gently) but
like Kansas, but there are
bouldertrains in a broad
strip. Went to SW. 1/4 of
sec. 23-95-15.

(skip 4 pages)

Lake side accounts

Receipts –

1912 ✓

June 17.	H. C. Bigglestone	tent rent	1.50
	D. H. Boot	Tuition $15 – Tent rent 1.50	16.50
	Lucy M. Cavanagh	– rent	1.50
	Minnie M. Cushman	tent rent, 1.50 tuition 15.00	16.50
	Hiram S. Doty	" " —	1.50
	Nellie D. Fisher –	" " 1.50 " 15.00	16.50
June 18	Dorothy Gard	—— " "	15.00
	Goodwin Gard –	" "	15.00
	Jonathan Gard –	" " —	15.00
June 17.	L. A. Giddings	tent rent —	1.50
	Edwin H. Golisch	" " 1.50 tuition 15.00	16.50
	Earl G. Grissel	" " ——	1.50
	Wayne Hagan (about 8 days)	" " ——	1.50
	G. C. Hamersly –	" " 2.00 tuition 15	17.00
	Elizabeth S. Hudson –	" " " 15	16.50
	M. W. Iles –	" " 1.50 ——	1.50
	M. O. Insko –	" " 1.50	1.50
	Theale T. Job	" " 1.50 tuition 15	16.50
	Paul J. Kruse –	" " " " "	16.50
	Florence B. Meadows	" " 2.00 " "	17.00
	Maude Merritt	" "	1.50
	Garrett S. Muilenburg	" " ——	1.50
	Oscar W. Rosewall	" " ——	1.50
	A. H. Schatz	" " tuition 15	16.50
	Katherine L. Stewart	" " tuition –	15.00
	Glenn I. Tenney	—— "	15.00
	Morningside College – scholarship for Insko		16.50
June 19 –	J. O. Weaver –	tent rent 1.50 tuition 15	15.00
	(Hamersly again)	tuition 15	
June 21	Bonnie Belle Boardman		1.00
	– Rev. Smith –	collection –	5.00
	"	broom –	
			$296.50

Ice - (Mrs. Cherry) 20.00
coal 7.70
Express (" ")

Expenditures.

June 23	Henry Wallace - traveling expense	$ 5.00
Aug. 12 -	Arp Bros - scheme -	25.50
" 3 -	" " " etc -	29.00
" 24 -	K. S. Myers - coal -	7.70
July 11 -	Express on box from Buffalo	1.30
	Mrs. Cherry's bill	44.05
July 21 -	Edward Walker, repair barrel	18.00
July 19 -	Des Moines tent & awning co. [illegible] + postage	.43
" 23 -	Western Union Tel. Co. (to F. C. George)	.40
" 28 -	Clifton H. Farr	5.00
Aug. 24 -	Standard Oil Co. - Des Moines (check)	13.86
	- Midland Telephone Co. - season -	7.00
June 14 -	John T. Anderlik - dredge -	6.50
Aug. 15 -	J. W. Kowalike - wire cable -	4.50
June 19,	2 lamp chimney	.25
	Sieve	.20
June 20 -	C. H. Farr.	5.00
" 25 -	C. H. Farr.	10.00
" 26 -	Telegram from Pres. Bowman	1.50
July 28 -	C. H. Farr -	5.00
	- Rev. Jos. Newton - Transp.	.46
June 13 -	Marsh Bros - dredges	1.70
~~July 23~~	~~Telegram George~~	~~.40~~
Aug 24 -	L. A. Giddings (Thaine City 3)	12.18
" 3 -	C. H. Farr -	25.00
		$ 229.83

Sep. 21, 1912

RR to Muscatine	$ .77
Team	.80
Breakfast Muscatine	.50
Lunch "	.20
RR to Iowa City	1.14
Lunch - Col. Jc.	.40

Oct 1 - 1912

Car fare to [illegible]	.55
" " " " "	.55
Difference on 2 fares	.30
Lunch	.10

Oct 5 - 1912

RR to West Liberty	.31
To Keokuk	2.09
Breakfast on train	.50
Lunch for field - Keokuk	.25
Supper - Keokuk Hotel	.40

.31
2.09
4.45
6.85

Oct. 6 - 1912

Room & breakfast, Keokuk Hotel	1.15
RR to St. Louis	4.45
Storage	.30

Oct. 7 - 1912

RR to Montrose	4.64
~~Supper~~ & dinner - Hotel Montrose -	1.00

229.83
25.76
2.15
1.50
259.24
23.54
282.78

(Nov. 16–1912)

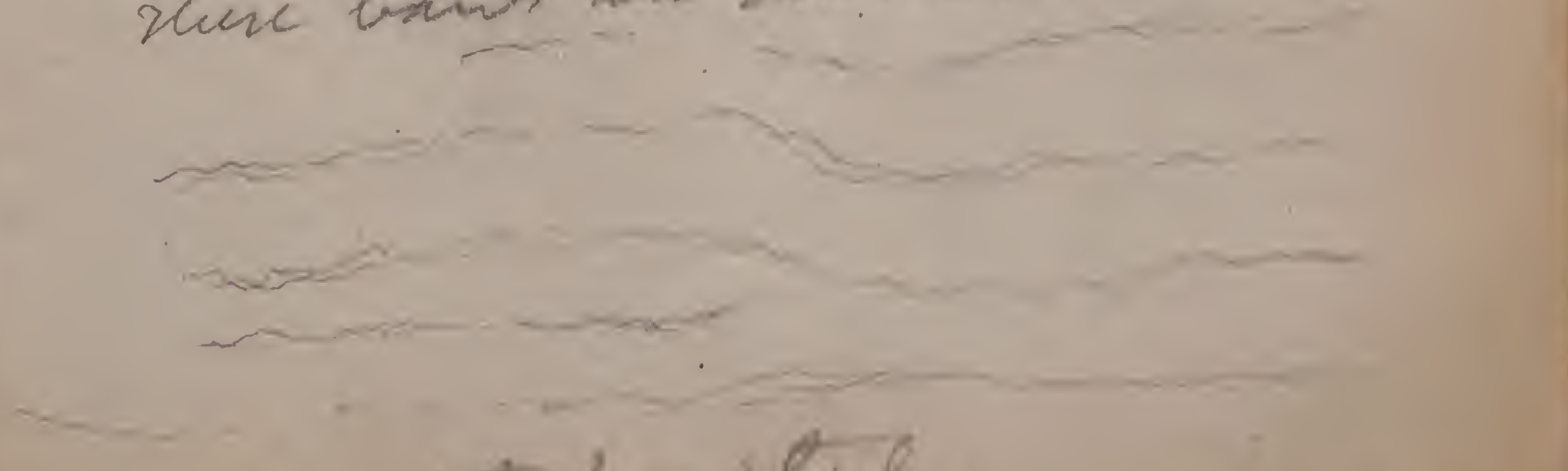
In afternoon we drove up toward Floyd.

Cut 1 – Took sample of loess-like material.

Cut 2 – Similar.

Cut 3 – Cut about 7 ft. deep. beyond Floyd Sta.

This cut has been pronounced loess by Bryan (see [illegible] reports) This cut exposes about 7 ft. It stands vertically in cut about as well as loess. It is yellow, on the old surface like yellow loess. But when you cut into it there are brown nearly horizontal bands as shown below these bands are darker brown &



mm up to 1 in thick. They appear in a zone about 2 ft

wide (not sharply defined) & its base about 5½ ft. below top of bank.
The yellow material in this part contains grains of sand visible to eye, & does not show cleavage of loess.
Below this (my sample 6 ft. below top) the stuff is lighter colored (slightly) with bluish clouding, & seems to be in places sandier.
But all this has coarser grains of sand than are ordinarily found in loess.
Some of these brown lines extend up to within 3 ft. below top of bank.
The uppermost layer is 2 to 2½ ft ~~thick~~ down from top & breaks up into lobular masses, on a small scale like jointing of drift.
This is also darker colored. see sample.

This deposit lacks structure of loess, has coarser sand grains, & is capped by coarsely lobular stuff that looks like modified drift.
The material is soft & we found root-holes(?) & what appears to be a gopher hole in it.
also took sack of layer with brown bands.

There are horizontal bands (short & interrupted) of yellow fine sand in this material below the lobular layer.
The material in the brown bands breaks up into minute lobular masses — more like uppermost layer on a very small scale.
It resembles uppermost layer in color also.
The grains of sand are plentiful throughout, & show best on the old overwashed surfaces.
There are no fossils &
no nodules.
The uppermost layer grades down into the next layer below, ...

line of denudation

Cut 4 is the next beyond (see map) + here about 8 ft exposed, same as cut 3 in all essentials. Found a more prominent band of sand (½ in thick) in lower part, same dark bands, bluish lower clayings, etc., as in (3) upper layer (lobular) also same. No fossils or nodules.

From this bank the lower material was taken to Waterloo + used for moulding sand.

From Floyd sta. to cut. 5 there are many sink holes, all with clumps of trees, etc.

Thomas reports a lot of similar sink-holes SW. of Charles City, on prairie, but each with clumps of trees, Pop. tremuloides, etc.

In this territory n. of Floyd there are a good many undrained places, + drainage is mostly underground. This territory is a comparatively flat plateau.

At cut 5 - 7-8 ft. exposed, - best on E. side, - but not bad. Calvin calls this loess in his notes, says Thomas.

This cut is very similar to (4) but the stuff is finer, the upper lobular layer lighter, + the streaks in lower layer also lighter. It looks more like loess, but is unmistakably same as cut 4.

No shells + no nodules.

This rests directly on the Stromatopora zone of the limestone

Cut 6 shows about 6 ft.
upper part lobular, reddish
& lower part loose, &
redder than before,
all more sandy than
in no. 4 or 5

Cut 7. shows lobular, bro
reddish stuff, like upper
part of 4,5 etc.
Contains 1 bubble (see it)
In lower part are the
irregular brown streaks
& bands
2-4 ft thick.
In one hard mass
lower into sand.
Below all is a rusty
sandy & gravelly layer.
Buchanan?
Cut 7 represents coarsest extreme & cut 5 finest of this series. all
show brown streaks.
Returned to hotel (Hildreth) & left at 6[15] pm.

Reached Mason City at 7[30] pm. & went
to Joe's.

Nov. 17-1912 Sunday

Went out to Big Slough & collected Polygyra
profunda (123 - all with white epiphragm) & P. multilineata
with transparent epiphragm). also a few
Pisidia in slough. Then went
to Lime creek & dredged.

Bottle A - from slough, with
Cladophora from rapids in
Lime cr. at bridge.

Bottle B. Lime creek -
dredging in slow current

Bottle C - Diatoms in swiftest
water in rapids, clinging
to dead leaves which seem
to have been in place for
some time.

Bottle D old Cladophora
on rocks in medium
current

Bottle E - Cladophora &
diatoms - Rapids
at bridge. Lime creek.

Returned at 3[15] pm. & went out with the
Montagues for auto ride. Went S.E. over
flat plain out by Lime creek.

Lime creek is becoming
very filthy from sewage of
Mason City.
Left at 7:40 am. for Nora Jc.

Nov. 25 – Monday 1912

Went north to Burgess's place with Prof. Kay & Trowbridge, Thomas, & to see excavation for foundation of barn.

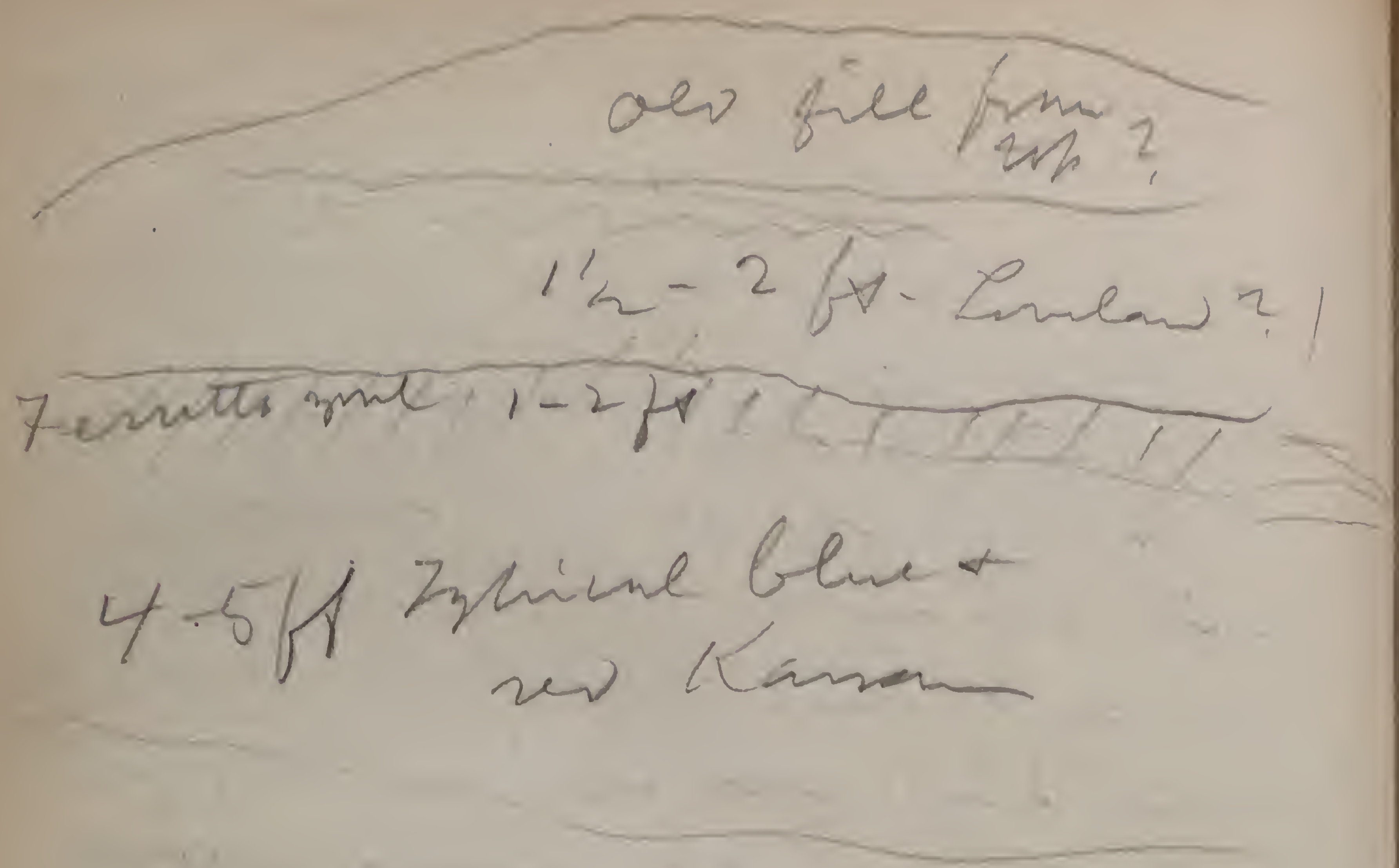
At barn there is bedded & laminated stuff, largely sand, evidently water-lain.

West of that, across ravine, is sand pit. Lower part shows stratified alternating silt & sand, in parts very much like the stuff at Floyd sta. in cut just above depot. This shades up more or less into yellow loess which is somewhat fossiliferous. Saw Oreohelix iowensis, etc.

This suggests Iowan below, – or laminated part as formed by water at close of Iowan.

How is this related to & post Kansan loess to the west? Look this up.

Returned to Brown street (alone)



This is exposure just W. of Schultz's, N. of Brown sts + ½ way down hill, at Fitzel's house.

The lowest member is typical Kansan with small angular boulders, some reddish + some greenstone + some white (quartz?).

The "ferretto" zone shades down into Kansan + is of usual type.

Above this is a layer very much like Loveland, reddish brown, jointed.

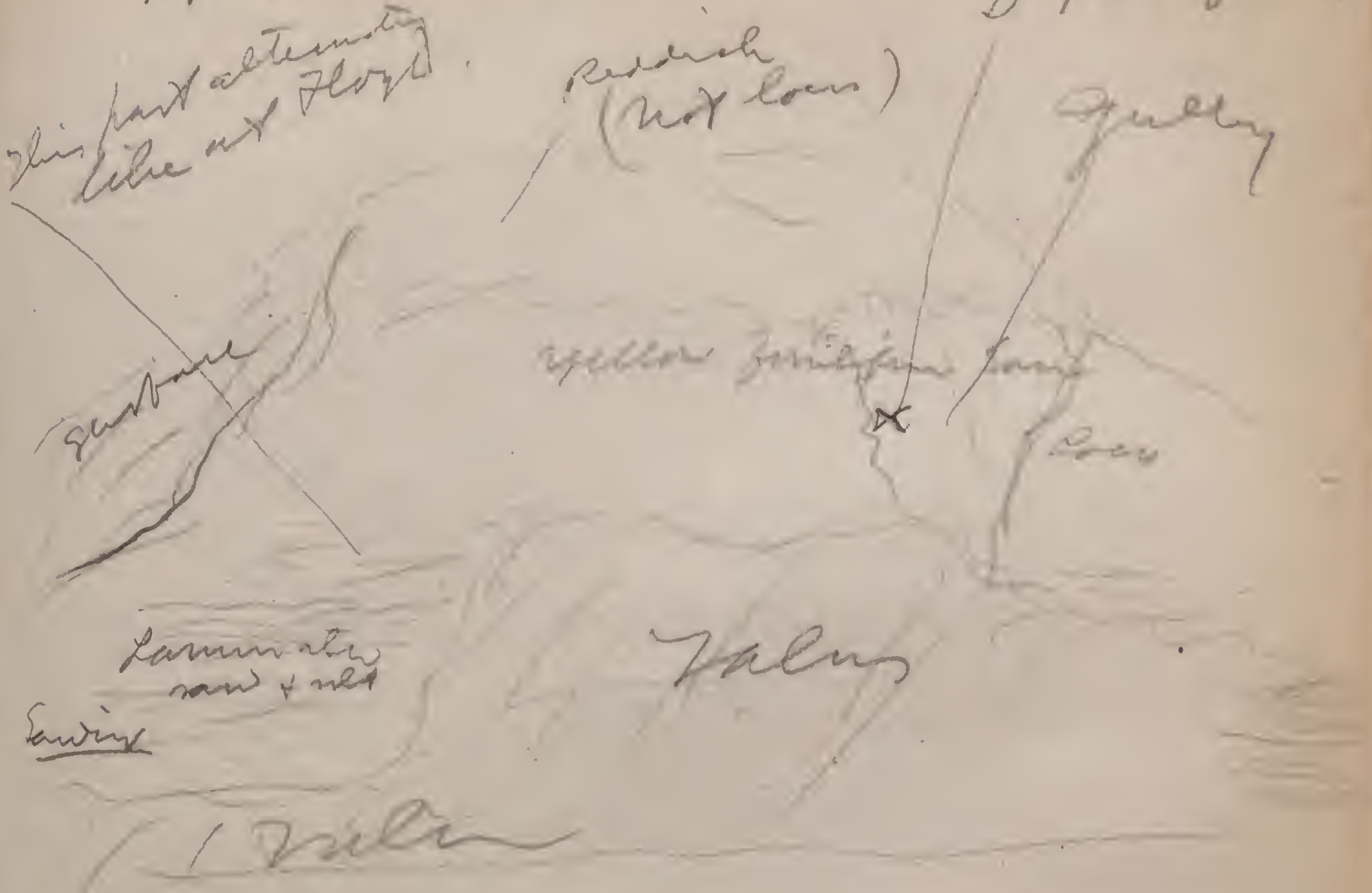
Above that more or less indistinct, with line which is probably old soil line with fill above it.

See sample of "Loveland".

This "Loveland" is coarser than in west, more coarsely jointed + shading into the ferretto. It is probably practically contemporaneous with it.

Nov 27, Wed. 1912

Went to Burger saw pit dug for fossils.



From loess obtained shells & nodules, also took sample,
Usual yellow loess with lamination, black streaks etc.
This must be 6 or 8 ft thick &
seems to shade up into reddish
top layer & lower sandy layer

Cut at foot of hill west –
rather east of ravine.

8 ft or so,
Yellow loess

3.5 ft.? Gray loess
fossilif.

chocolate layer
2–5 ft.

Rock. 3-4 ft

This whole matter needs
closer investigation. The last
section seems to be clear
enough, but the relation of
the sand pits section is
not clear.

Wednesday, Nov. 27-1912

Left for trip to west, at 9:30 AM., going to Cedar Rapids, & thence at 11:40 via C.N.W. & U.P. for Schuyler Neb.

Fare from CR to Schuyler
$6.89

Thursday, Nov. 28, 1912

Reached Schuyler at about 9 AM. & called up Mrs. Stech at David City who informed me that I was to have $25 at Clarkson, $25 + ½ receipts at Dodge, $25.00 at Prague, $25 + ½ receipts at Weston.

Mr. Longin Folda came down from Clarkson with Mr. Faltys as driver, & met me at Safarik's drug store. S.'s son is a student at Lincoln, - second year. We left at a little before 12 o'clock noon, & reached Clarkson, 22 miles away, at a little before 1 o'clock. [Autos going along road] [nothing may leave at 2 or 3 hours] Went to Mr. Mundil's house, as Mrs. Folda's family was out of town, (this is next door) where I was well entertained.

Spoke to a fair audience at 2 PM., speaking 1:30 hr. in Bohemian & nearly an hour to the children in English. Receipts only a little over $29. I received $25.00

This was Thanksgiving & many people were in country on visit with family reunions, etc., & in evening there was a big fireman's ball. Remained all night & had nice visit at Mundil's.

At hall met Mr. & Mrs. Svoboda. He is a minister in country (& not altogether successful I understand) & Mrs. S. wants to teach Bohemian in college, but she knows little English.

Also met Miss Kasala who is now teaching in the High School.

Nov. 29, 1912 – Friday

In morning visited in high school & spoke to children for 15 min. Left for Dodge at 9:30 am. Mr. F. Hejtmanek paid me $25. Mr. Mundil went along.

At Dodge no one seemed to know anything about the lecture, though bills were out. Went to the furniture store of the Srb brothers. The younger is mayor, & has charge of hall. He, however, was very lukewarm, & spent some time in explaining how Mr. Vráz was dissatisfied with receipts of about $60.00.

I went to hotel for dinner. After dinner I visited Father Bróž and had a fine visit with him, discussing loess, and natural history problems generally. He wants:

Loess paper
Aftonian papers.
Sioux Falls paper

He calls eolian loess "spraš" and regards "žlutka" as aqueous. He referred to Dr. Novak's work in geology.

Returned to Srb's store at 7:30 pm. Tom Vlach, a farmer, who with Srb, seems to run things of this kind locally. He took this up for Ochotnické Družstvo. A very small audience was present, less than 40 people.

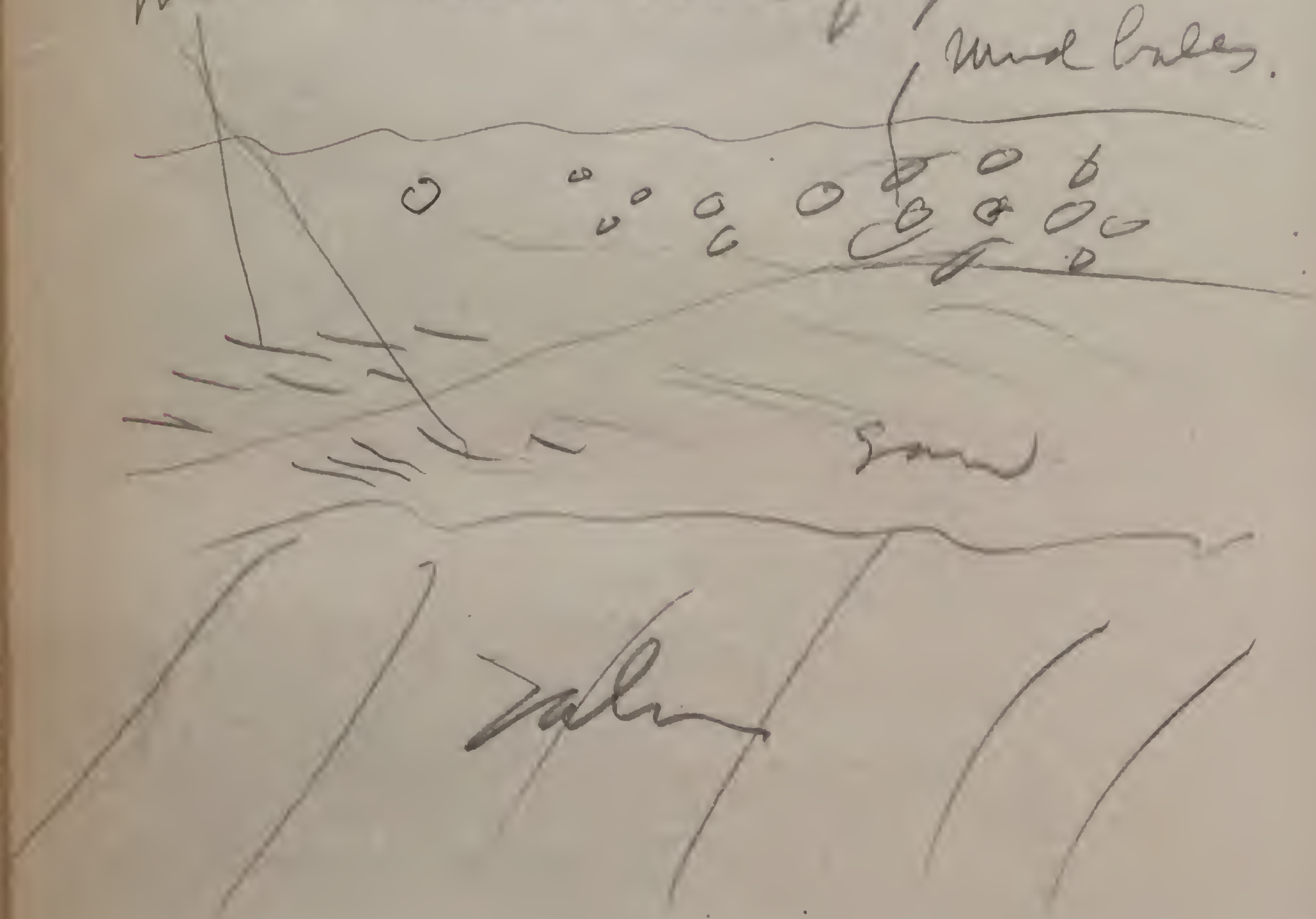
I believe the receipts were $9.25 There had been a big ball the night before, & everybody was done up.
The audience consisted largely of men & was attentive.
Talked over 1½ hrs.
Left by freight at 10.30 P.M. & reached Scribner at 11.20 Put up at Harder Hotel, & I never had a harder time to awaken anybody than the night clerk.
[illegible] to [illegible]

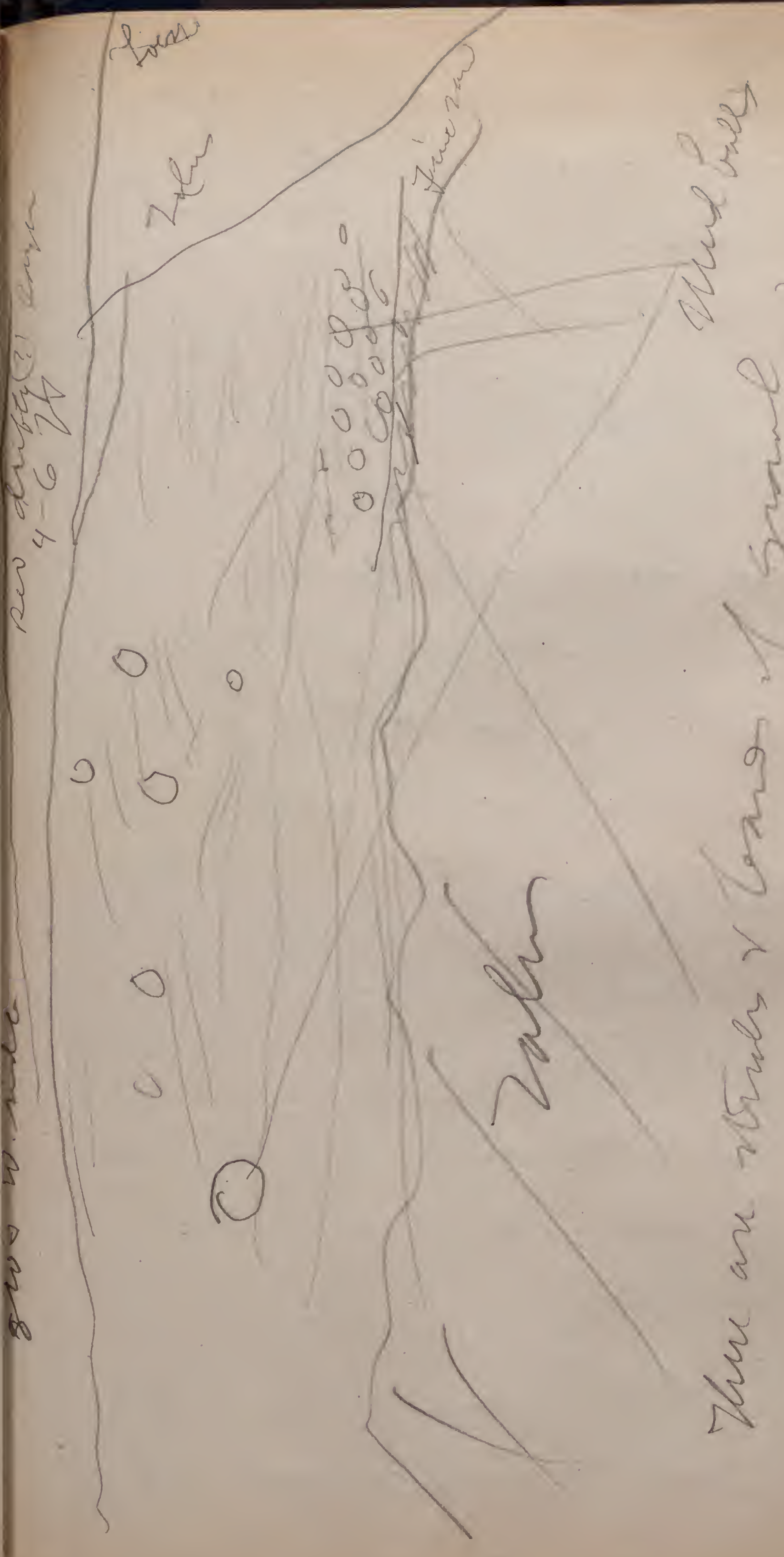
Nov. 30, 1912 - Saturday

Left Scribner at 8.25 a.m. for Wahoo (& Pearse).
A beautiful day, like all those on this trip thus far.
Reached Wahoo at about 10.30 a.m., stopped at Le Grande Hotel, & walked up to pit [illegible] N. of U. P. depot.
This is a fine sand & gravel pit with all the [illegible] [illegible] - cross-bedded sand & gravel, numerous clay balls.
One [illegible] Nebraskan (see sample) & others are white or whitish (see sample)
They are very abundant & run up to more than 2 ft in diam. (I think say 2½ at least. One is a red sand conglomerate.

I could see no bubbles in
the black ones, but some
occur in white ones.
There are not drift
mud balls. Silt!
The beds are exposed
more than 25 ft.

Mn^o 2 East side of pit





There are streaks & lenses of gravel, & then sand, etc. Mud Or abundant on E. side.

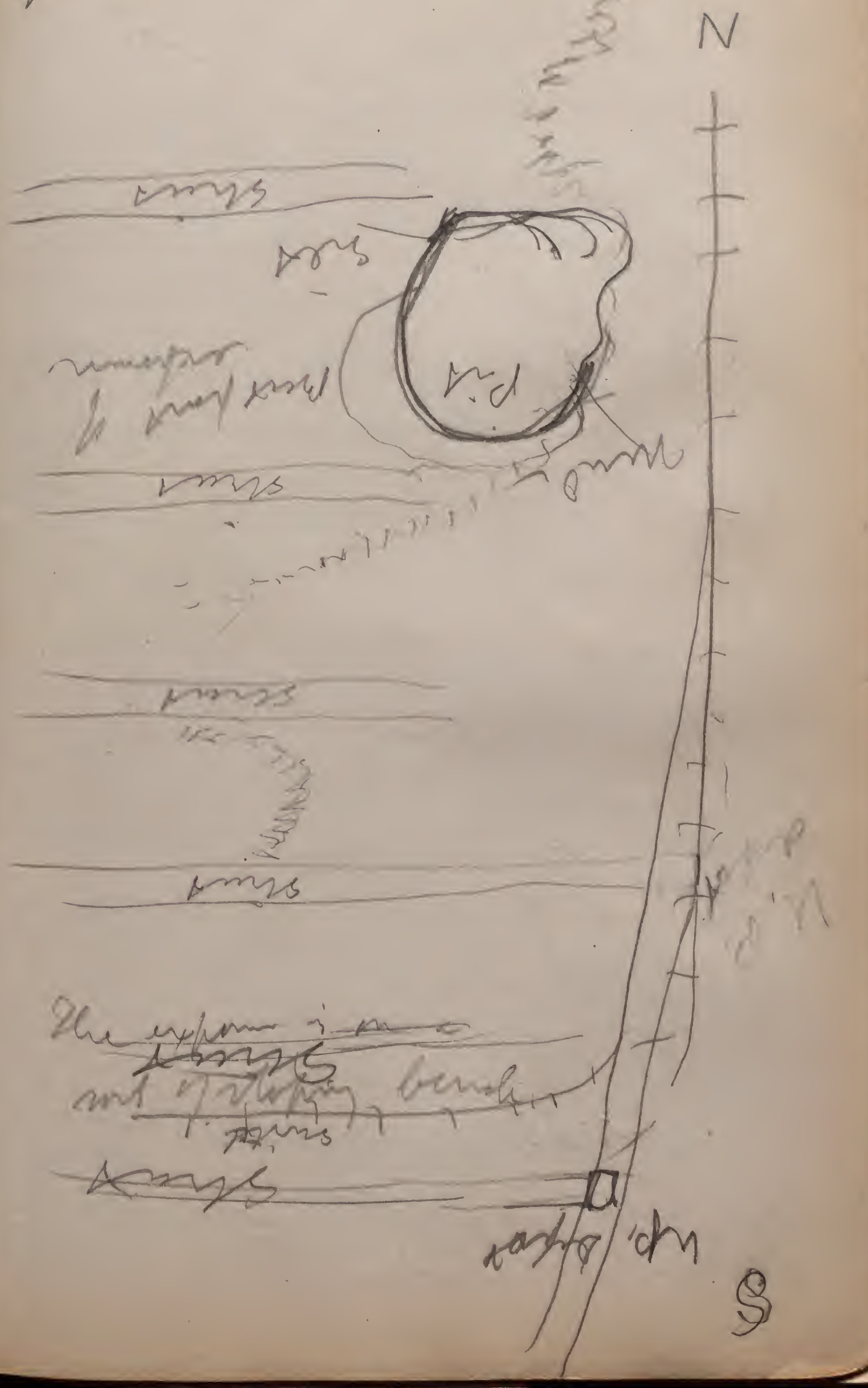
At N. end on W. side of pit there is old surface + talus, but evidently gravel + sand below, + upper part of this is loess-like silt — grayish, with limonitic iron-streaks, + laminated. It contains a few rounded lime nodules + scattered pebbles.

The pit is at edge of stream valley, — it is edge of a ridge.

Runs down probably nearly to level of valley.

The stuff above sand + gravel is red, jointed, full of pebbles — may be drift —

It looks much like some ferretto zones. Took sample



The exposure is on a ... out of sloping bench

East of RR. across flat bottom (3/4(?) mi.) & paralled with RR.

in a creek & its bluffs (E.) are close to it. & in a distance they are badly cut up & appear to be sandy.

They are lower than Wahoo ridge, & might be on level of sand & gravel bar.

Left for Prague at 5.55 p.m. & was met at Prague by the Postmaster, — Mr. Prai's partner.

Also ~~saw~~ Hon. John Vlasák (who looks like Dolliver) & other old timers.

Spoke to small audience.

probably not over 80. Went off house of —(— is it a Vlasak too?) & spent night

Dec. 1 – 1912 – Sunday

Left Prague in postmaster's auto at about 9 am & reached Weston in less than an hour. Warm, cloudy, & threatening rain, — did rain a little.)

Was met by Mr. Sandera whom I had met at Bruno, & was taken to his house.

The day was very stormy and blustery. Visited around, & met Mr. Rud. Novak, manager of lumber co., just now a father, — a bright young man also Mr. L. Kovanda, owner of Opera House & a Catholic school. Mr. Fr. Pavlik, owner of meat market, and others.

Spent part of afternoon in chat with Mr. Sandera's children & their little friends. Mr. Šandera's

family consists of
Eleanora - wants to be teacher
Stephanie - " " be music teacher
Beatrice -
Fred - wants to be lawyer.
Lodie, the baby boy.

The children are a bright, interesting bunch. Beatrice is having trouble with her voice. Spoke in evening to a very small audience. The night was dark & stormy, and besides there is no interest in matters of this kind here. They have never had anything here except dances, and conditions are pretty bad.

Tried to get to Fremont at Valley at night, but the bridges are out & I had to stay all night.

Dec. 2, 1912, Monday

Left Weston on freight for Lincoln at about 9.50, over an hour late.

The first station, Touhy, is 1492 ft. above sea. Just beyond station there is a deep cut which looks as if it is in gray loess, but I could not be sure. The day is bright & cold. All this territory is rough, rolling, like strongly characteristic Kansas.

There is a heavy up grade to Touhy & then down grade toward Valparaiso.

Elevation of Valparaiso = 1299 ft.

Coe Collection – Cedar River

Sph. stramineum – Hardin co – King.

Quadrula Parkeri (= tuberculata)

Unio gibbosus –

" securis

" ellipsis

" ~~ebenus~~

" Pyramidata (?)

Anodonta ovata (?) inflated, thin

Unio ligamentinus (= [illegible])

from Wapsie Valley river

Unusually large

Plan. trivolvis (?)

Anodon. ~~ferussacianus~~

" ~~edentula~~

" grandis

Geiser – paper on fresh shells

notes on the Naiad Fauna

of N. E. Ia.

Unio coccineus – flat – thin,

Coon river, Dallas co.

Sph. ~~partumeium~~

McLeod's run 1 mi N. of CR.

Mr Berry

Bifidaria interstata – slough
Polygyra clausa
" fraterna
" appressa 2 sp. only
Polygyra gyrina
Suc. ovalis –
Planorbis ——— (see spec.)
" trivolvis
Vallonia pulchella (low ground – swampy)
Bifidaria contracta
Polygyra inflecta
Circinaria concava
Leucocheila marginata com.
Bifidaria armifera
Planorbis bicarinatus
" albus
Lymnaea humilis (?)
Segmentum armigera
Cochlicopa lubrica 3 spec.
Zonites nitidus
Lym. exilis (reflexa zebra)
" palustris
Pyram. strigosella
Polygyra albolabris
" profunda
" multilineata
Pyram. alternata

Grinnell's coll

Helicina occulta
Pol. hirsuta
" profunda
Hel. [illegible]
Pol. fraterna
Pyram. alternata
Poly. albolabris
" " profunda
Polygyra inflecta
Suc. ovalis
Pol. multilineata
Suc. retusa
Lim. exilis (?) (zebra)
Bifidaria contracta
" holzingeri

June 20 - 1913

	RR. to Cedar Rapids	$ .50
21 -	RR to W. Okoboji -	4.52
	Breakfast - Orleans	.50
	Bus to Lake	.15
	Season ticket -	3.00
	RR. to Arnolds Park	.10
	~~Lunch - Cafe~~ -	.30
22 -	Hotel - room -	.75
23 -	" "	.75
	Breakfast Emmetsburg	.50
	RR. to Rockwell City	1.54

June 20 - 1913

Left Iowa City at 9[30] P.M.

June 21 - 1913 - Saturday

Left Cedar Rapids at 12[01] am. In morning found train was nearly two hours late. Towards Emmetsburg & beyond saw much Phlox pilosa, much of it white. also fruiting Anemone patens var. Wolfgangiana. Between Estherville & Orleans much Zygadenus in clumps, also Phlox pilosa, a patch of fruiting Pedicularis canadensis, a cluster of Scrophularia leporella (both near Superior) also saw several Heliopsis scabra in flower. Stipa spartea is very common. Iris versicolor in bogs. Also saw many patches of Galium boreale in fine flower. Some near Superior.

Took breakfast at Hotel Orleans

On prairie between Spirit Lake & W. Okoboji — in flower.

Prairie
Heliopsis scabra
Melilotus officinale
Phlox pilosa
Galium boreale
Heuchera hirsuta
Rosa —
Stipa spartea
Koeleria cristata
Zygadenus
Anemone canadensis
Hordeum jubatum
Zizia aurea
Oxytropis lamberti

Wet
Iris versicolor
Stachys palustris
Thalictrum purpurascens

Reached Lab. at 11 AM, having met Boat on Queen. Took dinner & went on Des Moines to Spirit Lake.

Dredged at dock above draw bridge & got many Calyculina partumeia. We had dredged here for 4 yrs. preceding & only got an occasional one. Pisidium was common, & a few Valvata tricarinata. Also a few large Amnicola cincinatiens. Also few Sphaerium —

Amnicola (lustrica) was common near bridge on old sunken mats of Cladophora where no mud was scraped up by dredge. Calyculina was in mud.

Went to Arnold's Park & put up at A. Park Hotel.

This was a beautiful, sunny day, with only gentle breeze.

June 22 – 1913 Sunday

Left for Lab. by Sioux City at 8 am. Had breakfast with party.

Conferred with Prof. Macbride, prepared my address, delivered it at 11 am. at morning service.

After dinner went out with Bert & outlined his work.

1. – 4 stations on N. shore of Millers Bay – 4 Belts for flora.
One dry station N.E.

2 – Stations N. of Harker's windbreak, Sheltered & exposed.

3 – Stations – "On Lookout"
b – In road S.E. in "trough"
c – W. side Lab. grounds.
d – W. ridge south of dining tent.
e – E. " " " "
{f – Woods at spring
{g – Boreal grove at flag staff
h – Springs above dock.

Yesterday we also looked at Twin Mounds station, & one N.E. of the narrow part of E. Lake.

Conferred with Tenney. Gave him directions for [illegible] & cleaning shells

After supper Bert & Ernest rowed me across the Lake & I put up at Arnolds Park Hotel.

Bert & I found following on N. ridge (N. of Millers Bay); ~~(In flower, or etc)~~ (on another page)

Oenothera serrulata fl.
Castilleja sessiliflora fr.
Bouteloua hirsuta – old.
Acerates lanuginosa – lf.
" viridiflora – lf.
Onosmodium occidentale fl.
Psoralea esculenta fl.
" argophylla – lf.
Solidago rigida – lf.
" nemoralis lf.
" canadensis lf.
Poa pratensis – fr.
Cirsium canescens – bud.
Antennaria – lf.
Delphinium (azure) 1 –
Rosa – fl.
Allium can lf.
Anemone patens – lf.
Fragaria virginiana – lf.
Stipa spartea – fl.
? Koeleria cristata – fl.
Agropyron Smithii – fl.
Petalostemum purpureum lf.
Erigeron ramosus fl.
Aster sericeus lf.
" oblongifolius
Galium boreale (one lower down)
Brauneria angustifolia

Astragalus caryocarpus fr
Lithospermum angustifolium ~~longiflorum~~ fr
Anemone cylindrica – fl
Physalis pruinosa ~~pubescens~~ – fl
Antennaria (neglecta?) fl
Amorpha canescens – lf
Sisyrinchium campestre ~~occidentale~~ – fr

On Lookout – in fl.
Phlox pilosa
Stipa spartea
Koeleria cristata

A beautiful day

June 23 1913 - Mon.

Left Arnold's Park at 5.50 am for Rockwell City. Fine clear day.

Along RR S. of Spencer the prairie is for most part changed. Noticed following:

Anemone canadensis fl.
Erigeron ramosus fl.
Hordeum jubatum fl.
Poa pratensis fr.
Stipa spartea fl.
Delphinium Penardii pallidum fl.
Phlox pilosa fl.
Psoralea argophylla l.f.
Zizia aurea fl.
Amorpha canescens l.f.
Rosa fl.
Symphoricarpos occidentalis l.f.
Artemisia ludoviciana l.f.
Heuchera hispida fl.
Koeleria cristata fl.
Oenothera biennis l.f.
Achillea millefolium fl.
Heliopsis scabra fl.
Asclepias syriaca l.f.

Coreopsis palmata l.f.
Elymus canadensis l.f.
Oxalis violacea fl.
Helianthus scaberrimus l.f.
~~Thalictrum purpurascens~~ Viti... fl.
Zygadenus fl.
Red clover fl.
Wh. " fl.
Convolvulus sepium fl.
Oxybaphus nyctagineus fl.
Taraxacum officinale fl.
Asclepias verticillata
Amorpha canescens l.f.
Petalostemum purpureum
Rumex altiss. l.f.
Helianthus maximiliani l.f.
Lepidium ...
Silene antirrhina fl.
Brassica arvensis fl.
Erigeron canadensis l.f.
Silphium laciniatum l.f.
Viola ... ? l.f.

Gillett's Grove

2nd column = S. of Gillett's Grove

This is all in Clay Co.

Along ~~Little Sioux~~ S. of Spencer on E. side are hills - right along RR. - prairie. This is just N. of Gillett's Grove. By all means stop at Gillett's Grove & ... wood, bluffs & also prairie.

A couple of miles S. of Gillett's Grove saw a big patch of Zygadenus on prairie along RR. In flower.

South of Gillett's Grove the prairie RR border is better but most of it is patchy, where lower or flatter, not prairie.

In Buena Vista, along RR I noticed: (condition as before)

Phlox pilosa
Erigeron ramosus
~~Anemone~~ canadensis
Psoralea argophylla
Hordeum jubatum
Zygadenus
Stipa spartea
Zizia aurea
Poa pratensis
Rosa
Oxybaphus

~~Thalictrum purpur~~
Heliopsis scabra
Petalostemum purpureum
Red clover
Wh. clover
Brassica arvensis
Koeleria cristata
Convolvulus sepium
Rumex
Silphium laciniatum
Achillea millefolium
Melilotus alba l.f.
Pastinaca sativa fl.

5/67

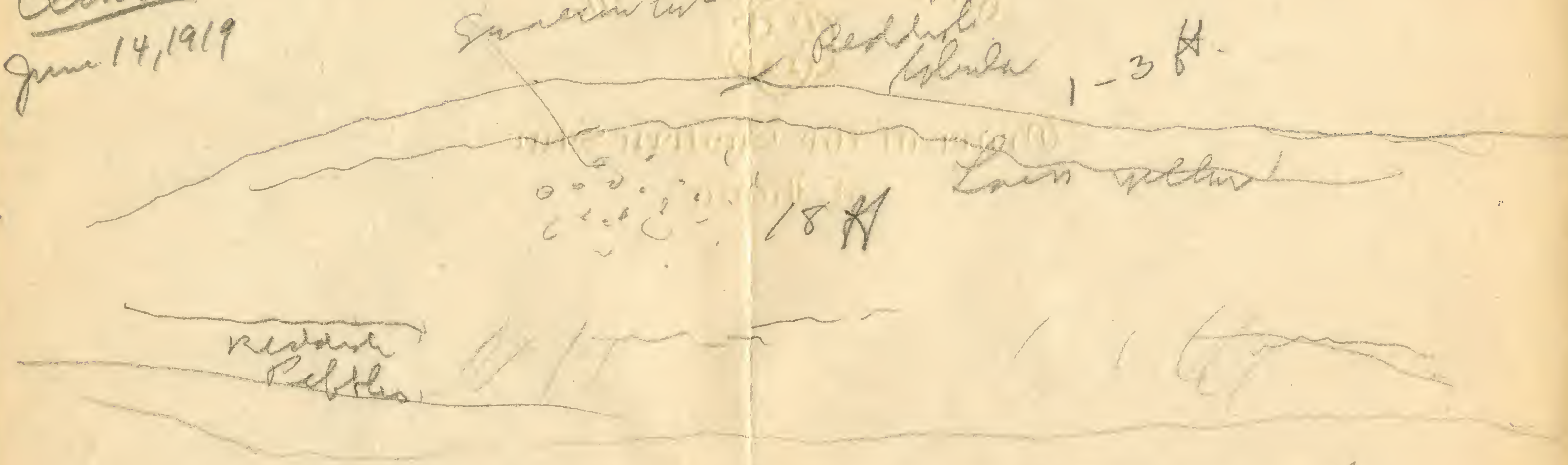
Aug. 7 – Cab .25
RR. to Grinnell 1.31
Supper/Hotel Monroe " 50
RR. to Eldora 1.04

15 – Sup.
~~14~~ Room
16 – Brk.
Din.
Sup.

Harlan – 9/4-5 – 1912
Audubon & Shelby – { Dec. 12, 1912
{ Aug. 13 – Sep. 7, 1913.
Shelby co. – Aug. Sep. 1918
Audubon " " "

cut 1 — Back of Mt. St. Clair School
Clinton

Clinton
June 14, 1919



Loess yellow, soft, little grayish brown - three
few small nodules + scattered shells

B. Shimek
Worthy Grand Patron
Iowa City, Iowa

Grand Chapter of the
OES
Order of the Eastern Star of Iowa

82,5
36.
88
40
77
323.5 Shares
.12
6470
3235
$ 38.820 Shares
1.92
$40.74 Total Share

16 mi.
.12
32
16
1.92

56 mi. Collin Campbell
.12
112
56
$6.72

Aug 7

Aug 7	R.R. W. Okoboji to Abbott Crossing	$2.78 .32
	Abbott Crossing to Eldora	.24
	Supper - ~~[illegible]~~ Hotel Orleans -	.50
Aug. 8.	Breakfast, Supper, room - Winchester Hotel	1.50
		.25
Aug. 9 -	Breakfast, restaurant -	
	R.R. to Abbott Crossing -	.24
	R.R. to Estherville -	2.46
	~~Dinner~~ Breakfast - ~~Hotel Orle~~ Lunchroom -	.25
	R.R. to West Okoboji	.32

Harlan - 9/4-5 - 1912

Audubon & Shelby - { Dec. 12, 1912
{ Aug. 13 - Sep. 7, 1913,

Shelby co. Aug. Sep. 1918
Audubon " " "

VERSITY OF IOWA
TY, IOWA
T OF BOTANY

52	51
135	178
99	229
286	

Aug. 7 – Cab .25
RR. to Grinnell 1.31
Supper/Hotel Monroe " 50
RR. to Eldon 1.04

15 – Sup.
~~Hm~~ Room
16 – Break.
Din.
Sup.

Taraxacum officinale | ~~Hordeum jubatum~~
Lepidium agrarium | Melilotus officinalis fl
~~Petalostemum purpureum~~ | Timothy fl.
Thalictrum purpurascens | ~~Achillea millefolium~~
~~Heliopsis scabra~~ | ~~Phlox pilosa~~
 | ~~Vicia americana~~ fl

~~Between~~ Webb and Albert City a fairly level Wisconsin plain. In many cases red clover, Timothy & blue grass have crowded others (native) out.

After crossing into Pocahontas co. along Milwaukee Rty) saw following:

Hordeum jubatum	Taraxacum offic.
Red clover	Agropyron smithii
Wh. clover	Thalictrum purpurascens
Timothy	Convolvulus sepium
Phlox pilosa	Petalostemum purpureum
Erigeron ramosus	~~Helianthus scaber~~
Heliopsis scabra	Stachys palustris
Stipa spartea	Oenothera serrulata
Silphium laciniatum	Artemisia ludoviciana fl.
Psoralea argophylla	Anemone canadensis
Zizia aurea	Trifolium hybridum (Alsike clover) fl.
Solidago rigida fl	Pastinaca sativa fl.
Achillea millefolium	Rumex crispus fl.
Koeleria cristata	Rumex — fl.
Rosa —	Melilotus alba fl
Poa pratensis	Helianthus scaberrimus fl
Brassica arvensis	Brauneria angustifolia fl
Oxybaphus nyctagineus	

In Calhoun county, between ~~Sac~~ Line below Fonda & Rockwell City, saw following:

Fine patch of Phlox pilosa, many white, between Varina & Fonda.

Stipa spartea fl	Brauneria angustifolia fl
Phlox pilosa fl	Linaria Butter & Eggs (at Knoke)
Psoralea argophylla fl	Poa pratensis fl
Silphium laciniatum fl	Lilium canadense fl
Erigeron ramosus fl	Anemone canadensis fl
Rosa — fl	Delphinium (Pale) fl
Stachys palustris fl	Asclepias verticillata fl
Petalostemum purpureum fl	~~Oxybaphus nyctagineus~~ fl
Koeleria cristata fl	[illegible] alternum fl
~~Timothy~~ Phleum fl	Lepidium apetalum fl
Red clover fl	Mentha arvensis fl
Wh. clover fl	Melilotus alba fl
Zizia aurea fl	~~Taraxacum officinale~~ fl
Solidago rigida fl	Rumex crispus fl
Taraxacum offic. fl	Artemisia ludoviciana fl
Brassica arvensis fl	Baptisia leucantha fl
Hordeum jubatum fl	Helianthus scaberrimus fl
Thalictrum purpurascens fl	
Heliopsis scabra fl	
Oxybaphus nyctagineus fl	
~~Stachys palustris~~ fl	

The older RR. has
prairie along it, but
newer line cut across old
fills shows little or none.

Stopped at Des Moines
river bridge just E. of Fraser.
Collected shells along river.
The Unios & a few larger
shells, Campeloma, Pleurocera,
Goniobasis, and a couple of
broken Polygyras, were
in the coarse gravel.
In the finer sand were mostly
Sphaerium striatinum, Amnicola cincinnatiensis
Goniobasis, Planorbis, Somatogyrus
depressus.
In the fine drift close to
water were a few land
shells & many small ones. See
list. This latter lot
includes the following species:

Amnicola cincinnatiensis
" (lustrica)
Lymnaea parva
Planorbis parvus
" bicarinatus
" trivolvis
Segmentina armigera
Lymnaea obrussa
" caperata
Physa gyrina
" integra
Pomatiopsis lapidaria
Pyramidula striatella
Helicodiscus parallelus
Succinea avara
Cochlicopa lubrica
Bifidaria armifera
" contracta
Leucochila marginata
Carychium exiguum
Zonitoides minusculus
" arboreus
Vitrea hammonis
Vallonia pulchella
"
Somatogyrus depressus
Strobilops ———
Polygyra fraterna

Polygyra profunda
" albolabris
" multilineata
Pyramidula alternata
Goniobasis —
Pleurocera —
Campeloma —

Of unionidae I got:
U. rectus {white / purple
U. ventricosus
U. gibbosus
U. spatulatus
U. ligamentinus
U. plicatus
U. mandulatus
U. rubiginosus
U. ~~undatus~~
U. coccineus
U. tuberculatus,

Anodonta edentula
Margaritana complanata
" rugosa.

Walk down the track to Oak Park collecting plants in woods & along R.R. Noticed that Fraxinus nigra & Carpinus caroliniana & Juglans cinerea run away up the steep slopes.
The woods are open & scant beneath.

near top & collected a few shells under bark & sticks:
Gastrodonta fuliginosa.
Polygyra profunda
Bifidaria

Left for Des Moines at 2:[42] pm.
Just missed connection & had to wait until 9.05.

Sioux City – Oct. 12, 1920 Tues

Left home at 4:50 am, caught the C. & NW. at 6:25 am at Cedar Rapids, and reached Sioux City at 5:30 pm. Mr. Taylor met me, and I was a guest at her home.

Talked to Sioux City Acad. of Sci. on "The origin of the prairies."

Oct. 13, 1920 Wed.

Left Sioux City at 6:05 am, was met at Manning by Joe, and visited at Emma's until about 1 pm.

The children were in school, but we stopped at the school house south, and called them out.

Emma looks remarkably well now.

In afternoon started out with Jos. Shaw, for Audubon co., – N.E. part.

Commencing at SW. cor. of sec. 18 in Lincoln Twp.

Went a mile N. & turned East.

For 3 miles the surface is undulating (rather rough) & loess shows on tops, most of it nodular at top.

Drift shows in several places on lower slopes, the most conspicuous being just W. of S.E. cor. of sec. 9. – A good sized hill running up to west.

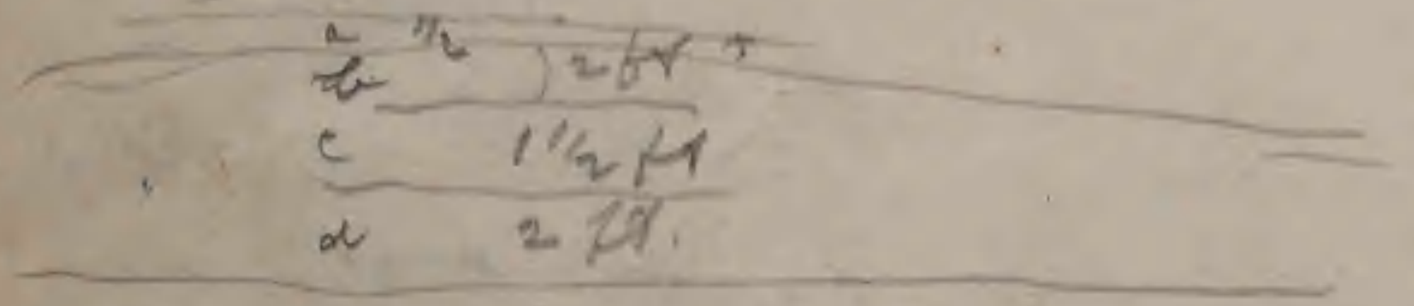
The cuts on this road are mostly small & low.

In next mile (S. side sec. 10) there is one long hill with gentler slope to E. & more abrupt to west. It shows loess (yellow) only. No nodules, & no drift exposed.

On S. side of sec. 11 there is drift at base of long hill & farther up, a layer of gray loess. Yellow loess on top.

At turn towards Gray, on S. side of cemetery, a low cut on N. side of E. & W. road

A bank about 6 ft high is exposed
shows drift, ferretto,
on N. side of road. Cut more about 60 paces, of upland
This is on lower slope. Higher up on N & S road, there is loess (see old notes) – on W. side of cemetery.



a. surface soil with grass roots
b – a reddish joint clay with small pebbles
c. a gray much (color of gray loess) a joint clay
d. Kansan drift, reddish & blue, with many lime nodules
The ridge rises higher to the north, & this cut is on a lower slope.

N. of Gray, N. of S. E. cor. of sec. 1; Lincoln twp. yellow loess shows in hill (with some gray below – lower down?)

On co. line – N. side of sec. 6 – Cameron twp. – the road has almost no cuts, but what little I saw was loess. On the W side of sec. 6 – some nodular loess shows.

Pilewort Vernonia in flower on co line
Turned S. one mile to S.E. cor. sec. 6.
Towards E ½ of the S. line of sec. 4, Cameron twp., some limey drift is exposed, but there is some loess (yellow) all along.
Country still somewhat rolling, but less so, & growing less eastward.

Cameron twp
Just E. of S.E. cor. of sec. 3. on S side road is a low cut on flat corner hill (low) which shows a jointy yellow stuff (see sample) – 1½ ft. below top of sod. Cut only 2 ft. deep.

Went N. between secs. 1 & 2, Cameron twp. There are two rather low (but big) hills on this line. In both cases low cuts (a & b) show drift well up on slope, & the yellow (somewhat loess-like) joint clay on top (see samples

Cut 2 on W ½ of S. line of sec. 3 – Cameron twp. – on slope to W. a cut 3-4 ft. deep from top to lower level
On top is the yellow jointy stuff somewhat resembling loess (brown); below (3 or 4 ft. from top) is a gray heavy joint clay.
(see samples 1 & 2 – yellowish gray joint clay)
1 – was taken 1 ft. above gray joint clay

Cut X S. side of sec. 4 – Cameron twp)
On a long slope – rising W. – shows 2-4 ft. of very nodular gray loess, some iron tubes, & a goodly number of fossils. (See samples)

(see top of next page—dr[illegible] here)

at cut y in N. E. cor sec. 9

there seem to be about 3 or 4 ft of yellowish loess with many nodules, & below that is drift with small boulders & pebbles.

This yellow stuff is like upper part in cut X, but has many nodules.

S. of y. there is some loess with nodules, but near S. end of this mile the drift comes well up.

Turned E. along S. line sec. 1 28

N. NW cor. sec. 15 – a heavy joint reddish clay & then joints brown layer. (no loess) on N. side

On E. side a little nodular loess. nodules like in X.

At SE cor. sec. 10 very limey Kansan drift is shown.

cut O – NW cor sec 14 – shows drift well to top, then 1–1½ ft – light blue joint clay (see sample), & a least about 2 ft of yellowish loess with some nodules (small)

(1) sample 2½ ft soil & yellow loess

(2) sample 1½ ft gray loess & many nodules & fossils.

This seems to run to top where only the yellow layer shows

The thin loess runs well to top

The country eastward is quite generally rolling, and there are some of the more abrupt pitches in the road, and on the slopes generally, that may be seen over the loess-covered area.

We drove in to Audubon and found no hotel. Put up at house of Mr. L. R. Johnson

Drove W. to NW. cor. sec. 15, S. 1 mile, west 1 mi, S. 7 mi to Audubon.

Oct 14, 1920 Thurs.

Left at 9 am. a storm delayed us

Went west.

On S line of sec. 20, LeRoy Twp. just west of river at [illegible] a cut 3-6 ft deep on top of good hill shows yellow loess. In its upper portion are small nodules, & shells are scattered through it nearly to top. (see samples & shells). Cut X - S side 20

The country west is rather rough, deeply rolling loess-covered.

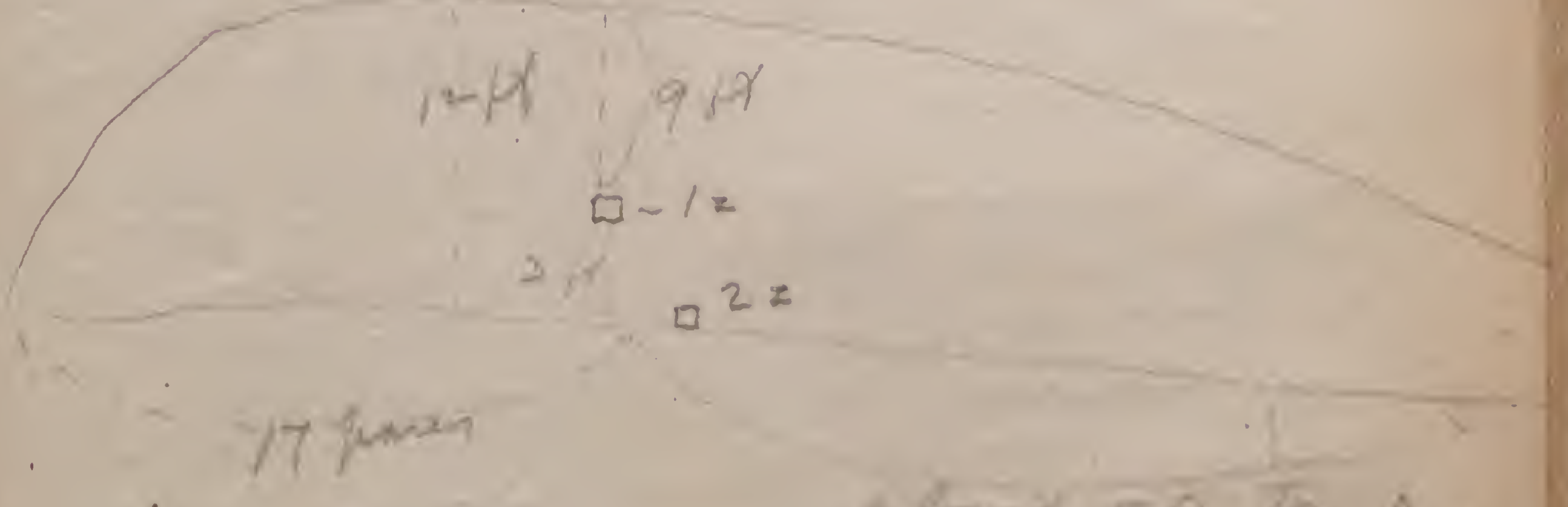
West S. - a low cut 3 ft deep, on top of hill, at X - E side of 29. shows drift almost to very top. This is a ridge ending in river valley east. Over the drift at very top is 3 or 4 ft of brown, [illegible] stuff, - somewhat loess-like.

At (y) on E side of sec 29 a cut 8 ft deep (on E side, 2 or 3 [illegible]) shows drift almost to top. [illegible] east is a [illegible] stuff - not at all loessy.

From point (O) on E. side sec. 32, looking S, SW & W. the country is very rolling, & then extends to river east.

Cut Z at NE. cor of sec 32 shows a yellow loess, about 12 ft deep on S. side of rd. It is rather soft, with more or less vertical black [illegible], blue streaks especially below, & no nodules or fossils. Sample of upper loess at Z - marked (1 Z) — ft. from top

Sample from lowest fossiliferous loess marked 2 Z - from very base of cut.



The upper loess is yellow & soft. Lower down it grades into a heavier, somewhat darker, loess with few soft [illegible].

No lime nodules in either

The fossils were found only in the lowest, heavy loess, about a 1 ft exposed.

At W on N side of sec 32. there is a cut on top of hill & down E. slope, showing several feet of yellow loess.

The line between sec 8 & 9 + 16 & 17 (a mile & a half) is in very rough country (& all around it is rough.) The hills are narrow & steep, & there seems to be only a thin loess on top. Drift shows well up.

At the turn in center of sec. 8
at NE side of intersection, a little
loess with nodules shows. Then
immediately below, eastward, drift shows.
Just E. of creek on S. line of sec. 16.
The steep hill shows drift almost
or quite to top. I could see no loess.
All along the loess is thin.
Along S. line of sec. 16, along road, on two hills:

Elymus canadensis
Solidago rigida
Verbena stricta
Salix humilis
Ceanothus ovatus (see spec)
Gaura biennis
Brassica [illegible]
Aster multiflorus
Helianthus scaberrimus
Andropogon furcatus
O. [illegible] diffusa
Aster laevis
Bouteloua curtipendula
Lepidium apetalum
Poa pratensis
(Sporobolus heterolepis) (... grass) (see spec)
Dyssodia papposa
Silphium laciniatum
Muhlenbergia (see spec.)
Lactuca ludoviciana
Solidago missouriensis (see spec)
Kuhnia eupatorioides
Coreopsis palmata
Solidago [illegible] (see spec)
Heliopsis scabra
26 Sorghastrum nutans

27 Euphorbia corollata
Rumex crispus
Liatris punctata
30 Cassia chamaecrista
Liatris scariosa
Carduus discolor
Amorpha canescens
Gentiana puberula (see spec)
35 Erigeron? biennis
Petalostemum candidum
Chenopodium leptophyllum
Andropogon scoparius
Liatris cylindracea (see spec)
40 Panicum scrib.
Lepachys pinnata
Achillea millefolium
Petalostemum purpureum
Erigeron canadensis
45 Aster sericeus
Astragalus canadensis
Ambrosia bifida
Meliotus alba
Monarda mollis
50 Agrimonia? (see spec)
Prunus virginiana
Vernonia noveboracensis
Solidago graminifolia
Artemisia ludoviciana
55 Asclepias verticillata

56 Corylus americana
Panicum virgatum
Lactuca (see spec)
Lespedeza capitata

60 Eryngium yuccifolium
Rosa (see material ...)
Oxalis stricta

Drove to E. & W. road across ¼ mi S. of N. line
of sec. 23. — From E. end of this road
facts NE, E & SE is a gently
undulating plain, — evidently
All along this road from where we turned
in off main road (i.e. along this mile) the
drift seems to come to surface & there
is no loess.

On E. side sec. 14 / Hamlin Twp, at
X- is a low cut, 3.5 ft over top
of rather flat ridge. The top
seems to have 4 or 5 ft of loess - it
is yellow above, more compact
below. I took samples 1x - E. side cut
from yellow upper part.
2x - from grayer compact
The upper part is yellow, columnar,
crumbling. About 4 ft
Below that more compact gray
(more grayer than my sample) with
iron tubes.
No nodules or fossils
This is probably E. limit.
3x - grayer loess from base in same cut

Cut x – E. side sec. 11 –

At 2x there seems to be lower part of yellow layer, I could not get gray layer below it. Did not cut deep enough

At z on E. side of sec 11 there is an exposure 2–3 ft. of a brownish yellow, somewhat jointed stuff. Not loess!(?)
Drift on base or lower part of slope to north from z.
At y – E. side of sec. 11, there is a little loess on ridge, with some small lime nodules. Drift runs well up, and there is evidently only a thin bit of loess.

Cut 1 in sec. 12 – Hamlin twp. is low down top of ridge & shows nothing but drift
Cut 2 sec. 12 shows gray, iron tubes loess – a few inches on W. slope & about 4–5 ft of yellow loess
[illegible] forming a nodule
nearly a foot of gray loess, with large iron tubes exposed about 1/2 way down
Its the yellow follows slope very well.

Drift shows a little more than 1/2 way down.
Cut 3 in sec. 12 is very similar to cut 2, also on W. slope, & drift about same, with same gray loess, but yellow loess is only 3 or 4 ft thick or less. However, it may be thicker at top, where cut now shows only 1 ft or, at very top, none.

We drove northward to N. line of Hamlin Twp.
Stopped on W. part of S. line of sec. 6 in Greeley twp. and noted that surface stuff in road looked brown, & not loess-like, more like my brown layer on drift to the east.
A heavy rain caught us, & after waiting over half an hour (during which it poured) we drove to Audubon again & put up for the night.

Supplementary notes

In the SW. corner of sec. 22, Hamlin twp. (Audubon co.) the corner is above bottomland & is covered with clumps of basswoods (not large)
In the NW. corner of sec. 27, just S of

the basswoods, there is a wooded bank or slope along creek.
The grove in the n.E. cor of sec 21, Hamlin Twp., is mostly burroak (at upper edges wholly so.)

Oct. 15, 1920. –

The very heavy storm had made the roads bad, and we had quite a time of it driving back to Strasser's in the mud.
In the afternoon drove to Manning for my supplies.
Roads were very bad.
This day gave little in the way of results.
Mud! Mud! Mud!

Oct. 16, 1920 Sat.

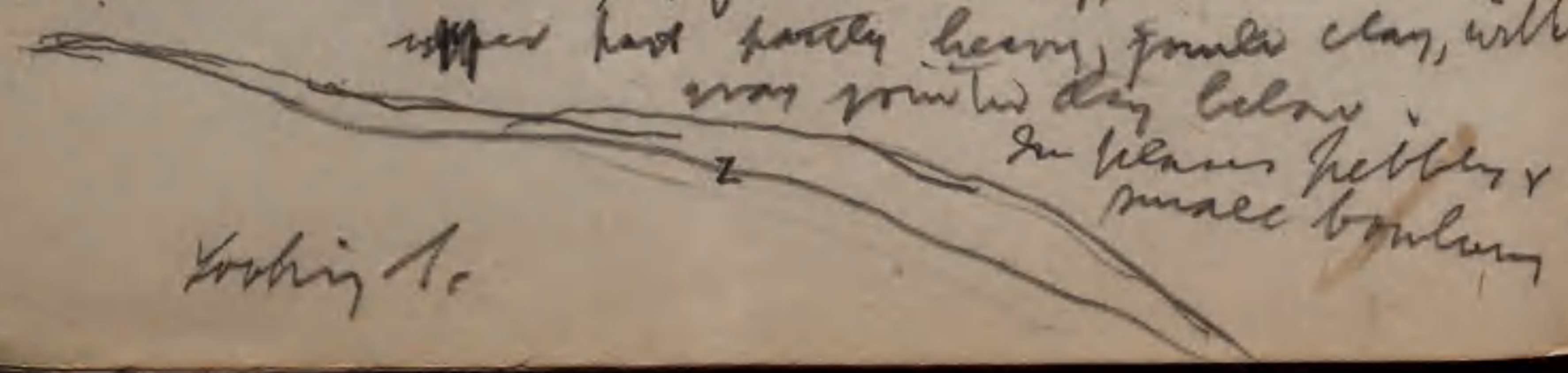
At x—just S. of Ross the road cuts into side of slope (fairly well up) & shows nothing but drift.

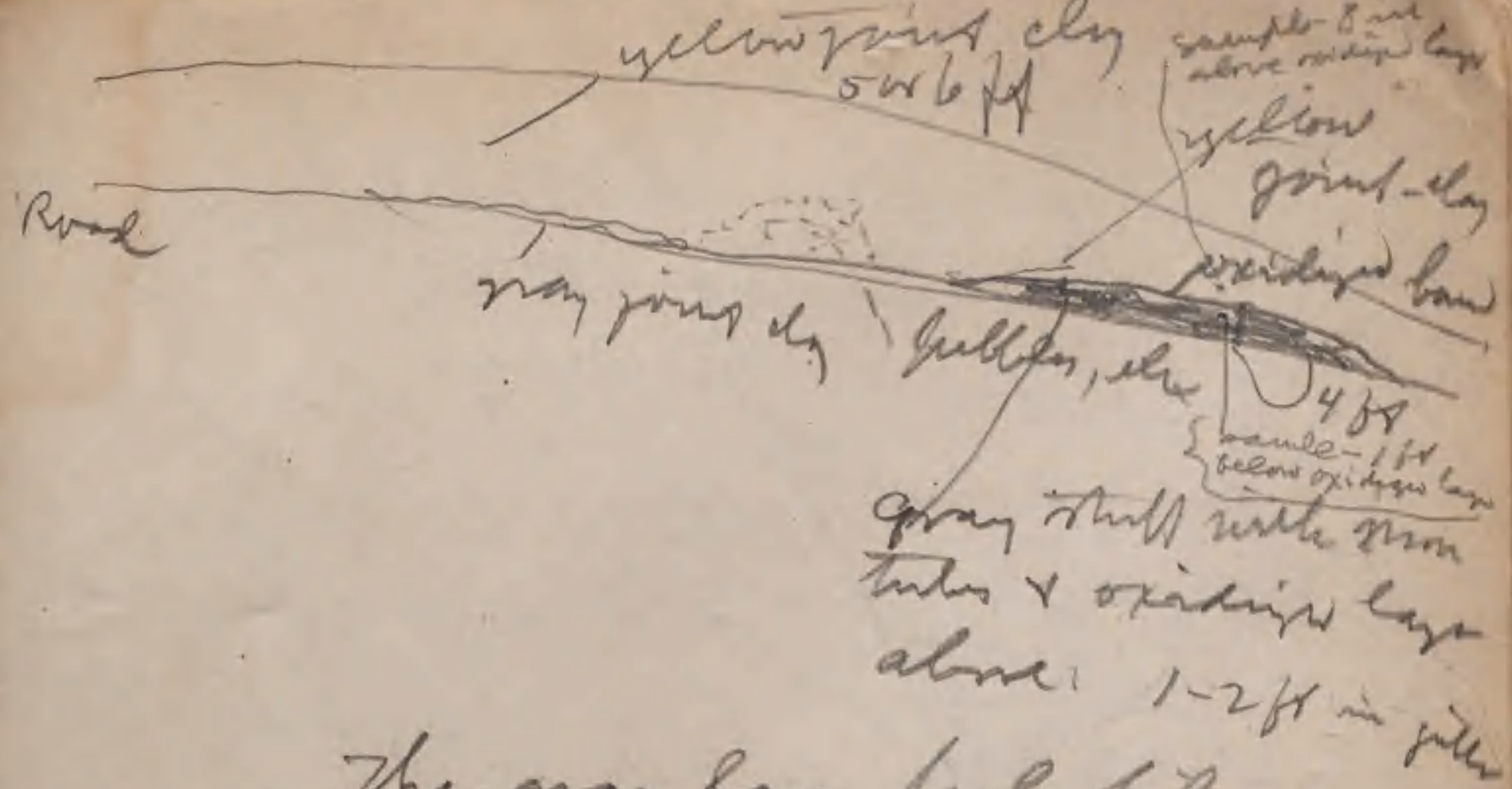
At y—just S., a low cut on rather long slope shows a foot or so of gray loess with large iron tubes & strongly oxidized layer above, & above that yellow loess, a foot or more shown, with grass hiding upper part.

The strong iron oxide band juts nearly along with surface of road & is exposed (with a little gray loess).

For 55 paces, within 6 ft of top of rather flat ridge. The slope to base must be 12 ft. or more.

At x between sec. 9 & 10, LeRoy Twp., on E. side a cut runs down hill to S. Drift shows up to z, with



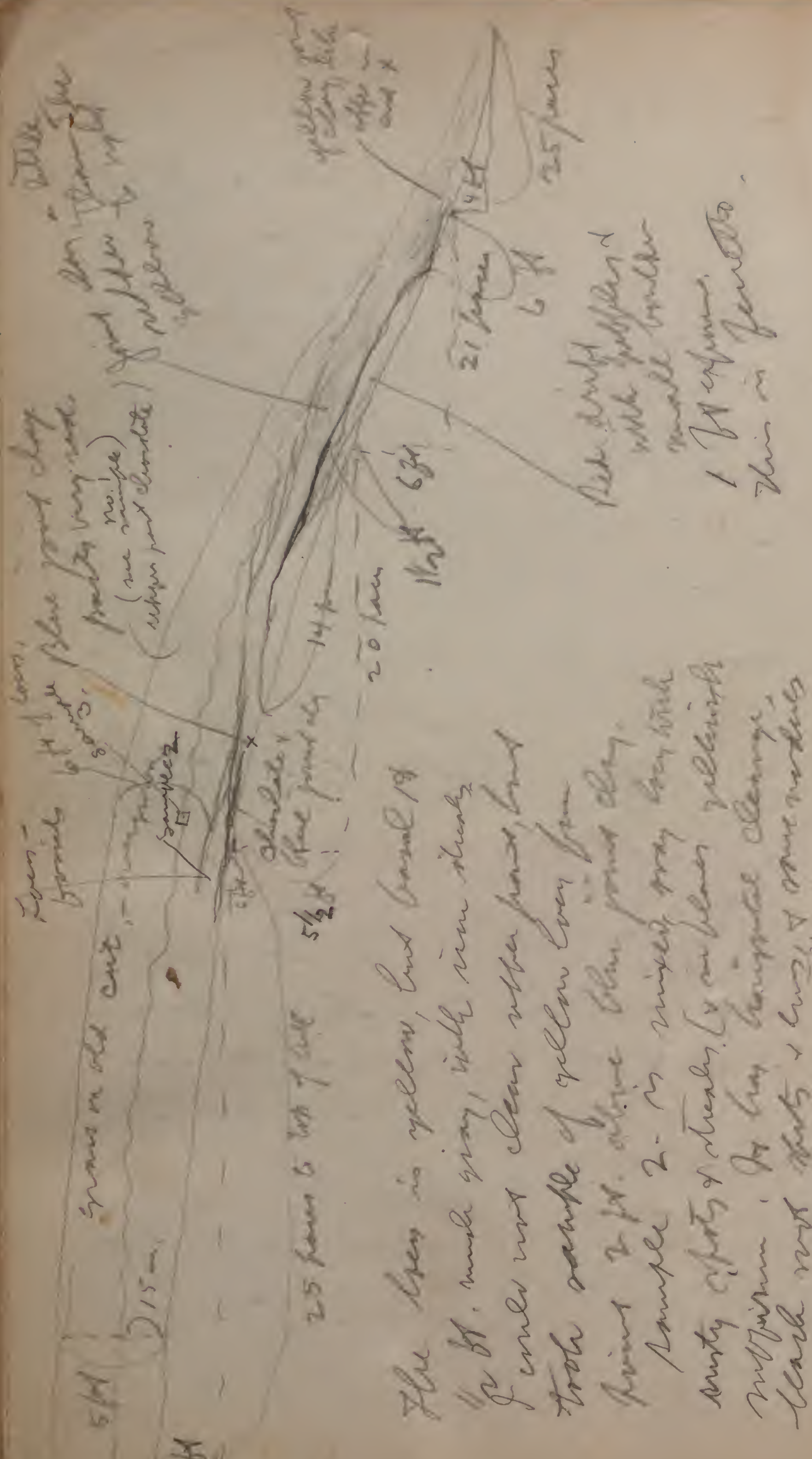


The gray layer looks like gray loess, but is heavier, & evidently just a continuation of the gray joint clay farther up on slope. 4 ft. of gray layer exposed. It is jointed, & evidently not loess.

Is it possible that at x above (north of this section) the same is true, & that that is not gray loess? (Not likely)

Cut y between sec. 9 & 10, Leroy Twp, Audubon Co., is located on the east slope of a ridge which runs out just east of road. The territory E. then, as far as I can see, is gently rolling & evidently not loess-covered.

The slope is rather gentle. (see profile



The loess is yellow, but basal 1½
1½ ft. much gray, with iron streaks
I could not clean upper part, but
took sample of yellow loess from
point 2 ft. above blue joint clay.
Sample 2- is mixed gray loess with
rusty spots & streaks, (& on planes yellowish
[illegible]; Joint bug [illegible] cleavage;
Hard [illegible] dusty & limy; & some nodules
Lime nodules from this part -
This [illegible] [illegible] [illegible]

Loess is soft & cuts easily.
The blue, red & chocolate joint clay
(more or less mixed - chocolate on top)
is hard, jointed, & markedly different

cut x between 18 & 15 shows
drift on slope (down to W)
& upon a very red layer then
what looks like brownish stuff.
At very top may be very thin
veneer of loess, - but probably
not.

cut x between 14 & 15 2-3 ft
of reddish joint clay - seems
to be no loess.
This hill slopes up to south

At cut. x between 13 & 24 long
gully 6 ft
of reddish jointed stuff, evidently
near drift for a few small
loose boulders are in bottom of
gutter.
Runs to east (down)

Melville Twp
cut x betw 18 & 19, Melville Twp. shows
nothing but drift clear up almost to top
of long high hill (part of big ridge running
SW.). this slopes up to east. At top

of hill, while high) the cut on N. side shows only about 3 ft of drift, but on S. side there is a bank 7 ft high (or more) which shows only brownish jointed fine stuff (see sample) & I could trace it for at least 6 ft.

The upper foot or two of this bank & in cut 8, is soft, like loess, made so by roots! —

Cut X between 17 & 20 - Melville, shows drift almost to top, but latter is rather with 1-3 ft of grayish loess with rather numerous nodules & fossils.

Under it is the brownish layer & line between is not distinct - This seems to be just a thin bit.

Oct. 17, 1920 Sun.

Shaser and family drove to Avoca. worked on the way.

We entered Douglas Twp. between secs. 6 and 7, and travelled East 2 mi., S. 2 mi., W. 1 mi, and turned S. at ½ mi. post on E. side of sec. 18.

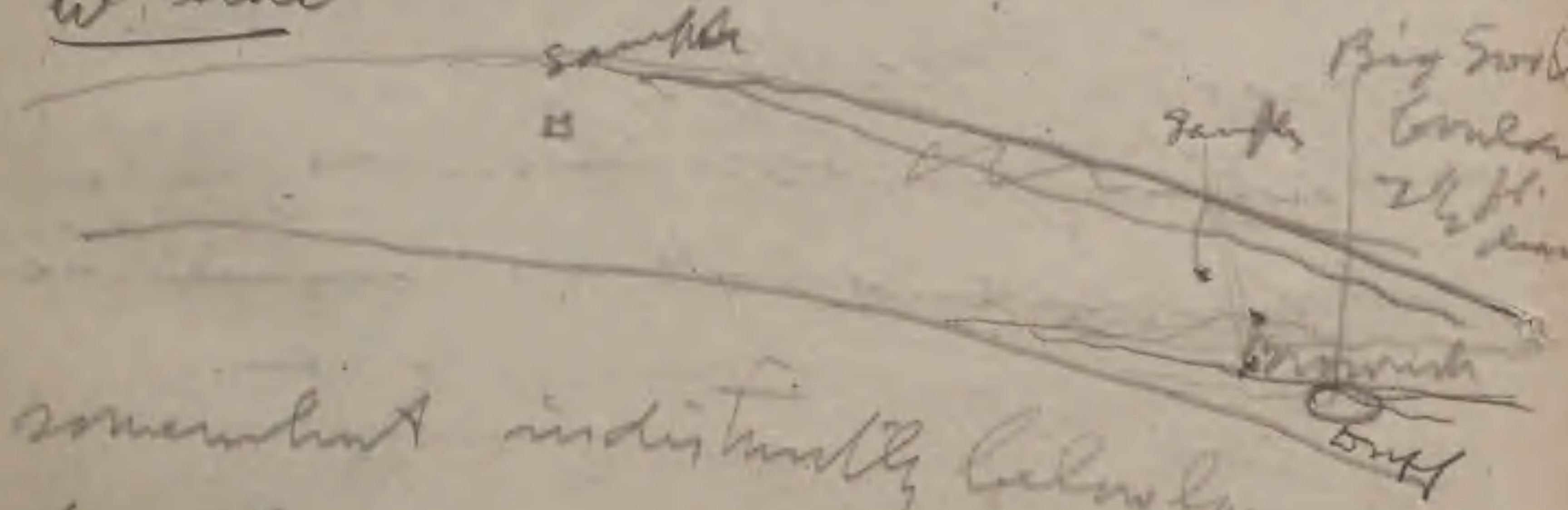
Noted topography, (see Twp plat).

My old cut 94 (=X.) between secs, 19 and 20, has a very thin layer of loess only on top.

Went up on top ridge just E. of ½ mile post on W. side of sec. 16, and had a fine view of topography. In all directions (as indicated by arrows) the topography is somewhat rolling, but not excessively. The Nishna valley is broad & slopes gentle.

Where drift appears between secs. 29 & 30. This is not on highest part of ridge.

Old cut 95 (=0) between 29 & 30
Douglas twp. shows 4-6 ft. of
yellow loess at top. Nodules
are scattered chiefly in upper
part & shells are found throughout.
This is on top. Partly down – about
6 ft below top of road & 1 ft below
top of ridge brownish stuff shows
w. wide



somewhat indistinctly below loess
but lower down it is thick at least
4 or 5 ft., & has no loess above.
The loess grades down to the brownish
stuff & a little looks like brownish
stuff, but has few fossils in it.
Below the big boulder & down the hill
drift shows, & loess runs out about
8 or 9 paces below boulder, which is
paces below top of hill.
The uppermost layer of drift is
weathered, rusty, & with many small
pebbles. Below that very clayey
drift.

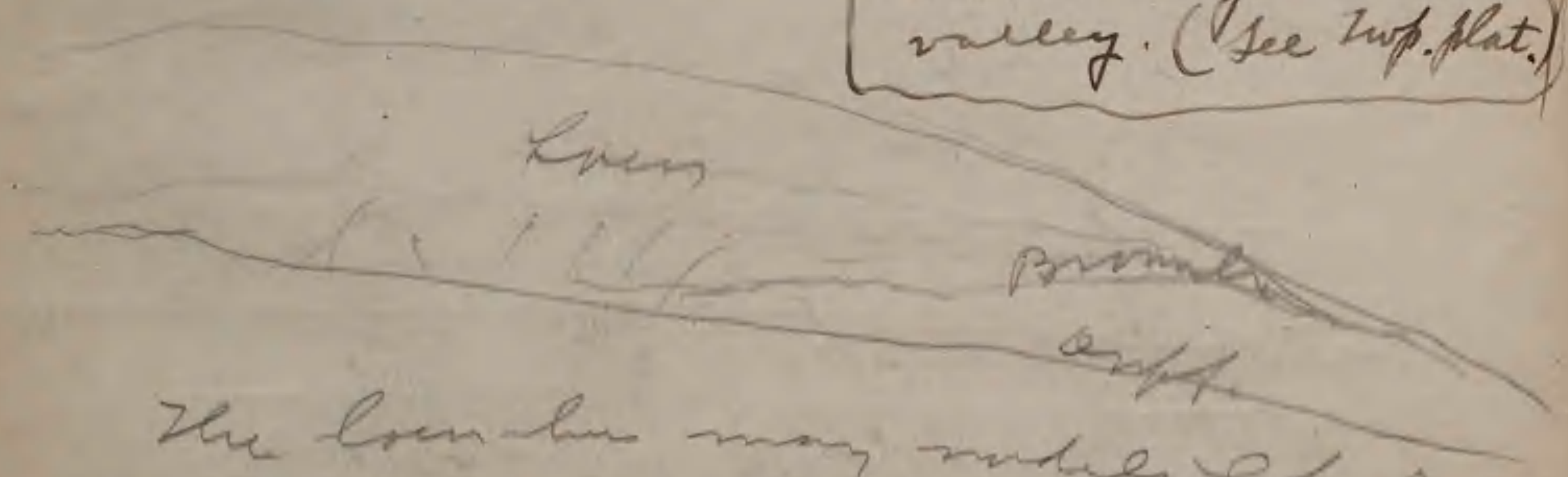
The brownish layer runs on
down hill – as far as I could
follow it, 2 or 2½ ft. deep
S. of boulder (top hill) the loess
is only 3 or 4 ft deep, then gradually
changes to brownish & in 1½-2 ft
changes to a very limy compact
stuff. Below the boulder the
brownish layer seems to be thicker,
~~as though the boulder had~~
~~stopped a lot of washing brownish~~
~~stuff before loess came down~~, then
further down it seems to rise higher
than loess.
Below boulder 3 or 4 ft. of
brownish stuff
The lime nodules run mostly
through upper loess layers, but
to N. of boulder I found a few
little ones near base of brownish
layer.
The red layer is less than 1 ft., &
then comes the oxidized drift of
pebbles, etc.
Took samples:
Red layer – near boulder
Brownish – 1 ft above
Loess 2 ft above brownish layer
2 from top of ridge – loess

Entered Sharon twp. - Topography is rough.
at x — Sharon twp

between 7 & 8 — shows drift almost to top of hill rising 20. from cross-ways & at top is a thin cap of loess — about 2 ft, with nodules.

at x between 17 & 18 — a cut over a hill. — Drift non rolling.

w. side — rolling loess; rougher than along Nishna valley. (See twp. plat.)



The loess here may notably [illegible] show — & fossils. (see box)
There must be 6 ft of loess at top in N. side of this cut.

On E. side the cut is only about 4-5 ft. & shows less distinct loess, but a lot of what appears to be the brownish layer. At very top on E. side loess & nodules show, but farther N. & S the brownish stuff seems to run laterally with loess (not below it in greater mass.

Return 29 & 30 — At x just S. of valley at Kimballton shows drift & brownish jointed stuff well towards top. There may be

a little loess at top, but I could see none.

The country down to Kimballton & E. is quite rough, & evidently in the loess limits.

Drift shows in road almost to top.

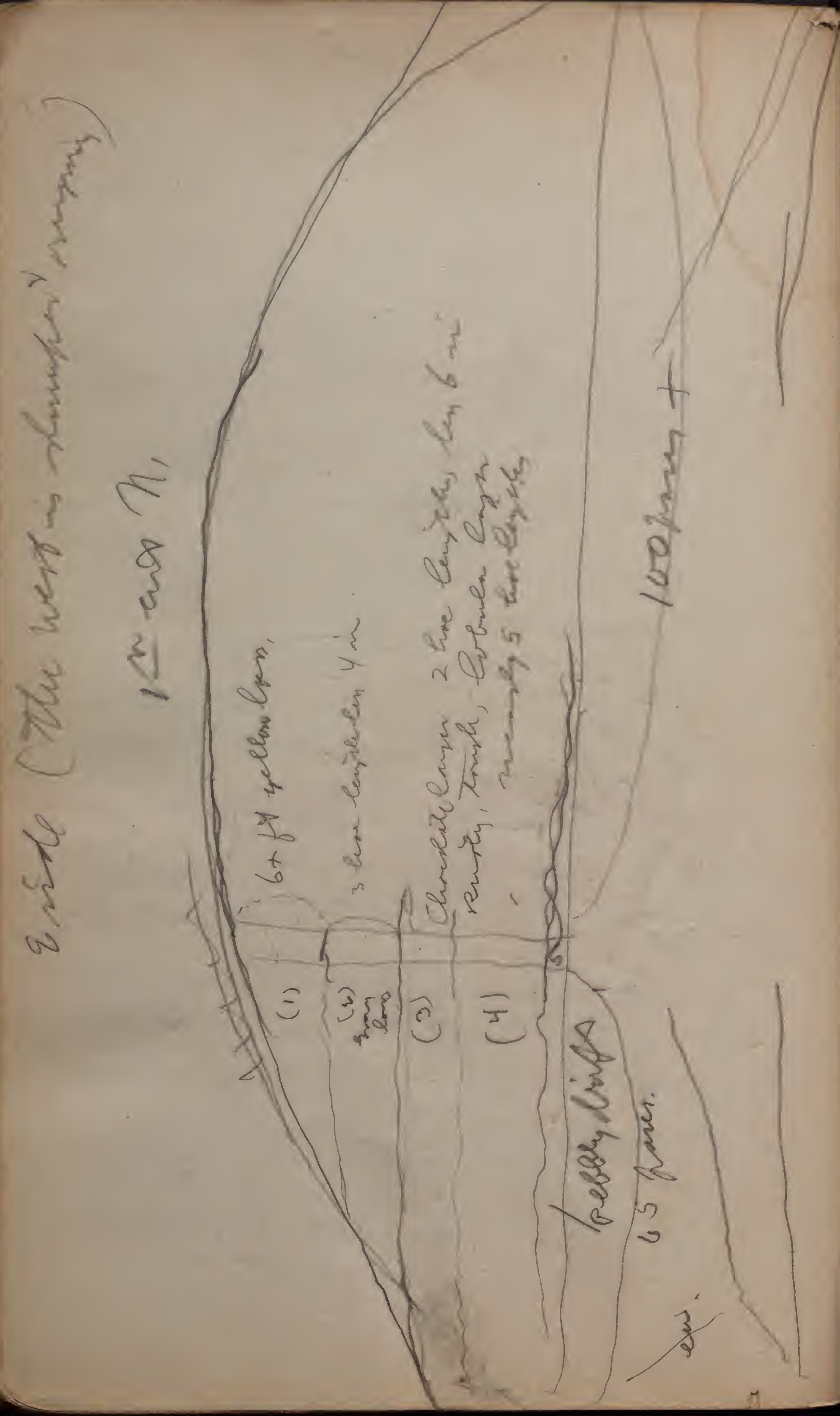
The two last cuts (between secs. 31 & 32) show no loess.

The N. one is on lower ridge & shows only brownish red jointed stuff.

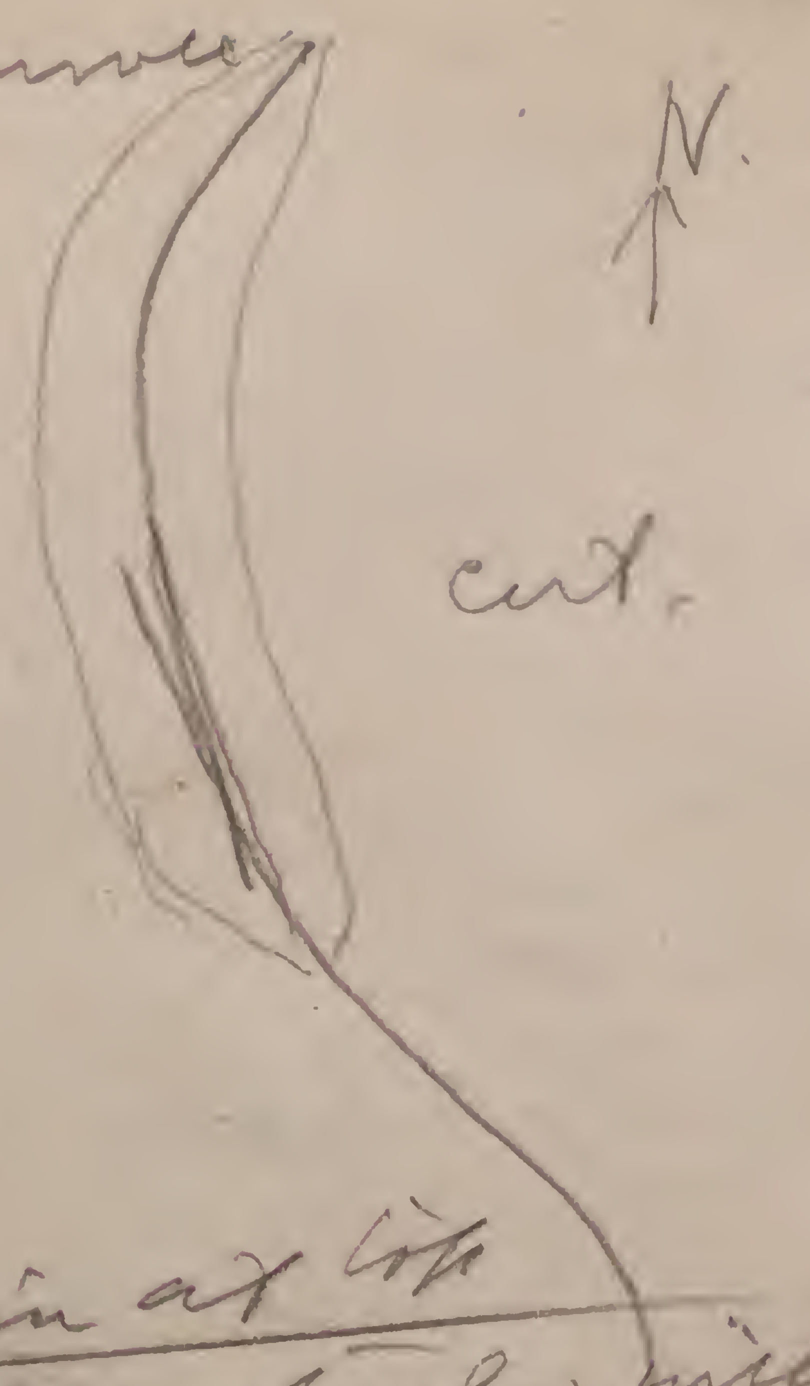
The S. one is higher, but there is no loess with nodules, but a brownish, somewhat lobular or jointed, stuff that is evidently my brownish layer.

The region to the W, S. & SW. is of the more gently rolling type. A broad ridge extends from here to the N.E.

In deep cut N. of Elkhorn I found two loess, both with fossils. There is an upper yellow (older) then a gray loess, then a chocolate layer & below that drift.



this cut is right N. of Eldbum
. the curve.



Begin at top

1- Yellow, streaks with gray-
upper part very slightly
lobular soil.
Took sample 2 ft from
base
nodules small, smaller
Some fossils

2- Gray loess - Typical - cleavage
etc. - big iron tubes - small
nodules - some shells.
Took sample 2 ft from
base
Nodules larger, simple, rounder
more.

3- Chocolate - sample
4- Rusty, lobular - sample

Cut 2 in along road just E of RR. Loess with fossils seems to be mostly yellow

Cut 3 - along RR. N. in Audubon co is similar to (1) & has many shells. (go back to it)

Final

Oct. 13 –	31 –	31	31	181
" 14 –	24 –	24	24	.18
" 15 –	18 –	34	26	1448
" 16 – Aud. to Manning	47 –	47	52	181
" 17 –	45 –	45	45	$ 32.58
	165	181	178	
	36		.18	
	201		1424	
	.18		178	
	~~1608~~		21	
	~~201~~		$ 32.04	
	$ 36.18			

31
24
18
47
45
36
201
.18
36.18

To Alliance –

Nov 5, 1921 = 31 mi.
12
43
.15
215
43
$ 6.45

Trips

Oct. 13 - 1920 - Shaw's to N. Audubon co. & Audubon — 31 miles

Oct. 14 – Audubon S & SE. 24 mi — 26

Oct. 15 – Audubon to Shaw's – in mud. 18 mi [above: Audubon to Manning]
~~Shaw's to Manning 8+8 –~~ (16 ") 5 "

Oct. 16 – ~~Boston to Shaw's~~ [above: Boston to N.E. Audubon]
Shaw's to N.E. Audubon. 47+5 = 52

Oct. 17 – Shaw's to Kimballton & Avoca 45

Avoca to Shaw's

131
36
167
23
144
.15
720
144
$ 21.60

36
15
180
36
$ 5.40

16
15
80
16
240

23
15
115
23
3.45

Expenses

W. Oct. 13 – Dinner, supper, room – 10 × 45 = 4.50 [above: 81]
Th. " 14 – Breakfast.
Fri. " 15 – Dinner
Sat " 16 – Dinner, supper, room.
" 17 – Breakfast, dinner.

167
.18
1336
167
30.06

Afton Jc. Oct. 1920

along R.R. – between old right of way + present –
E – of Afton Jc. about 5/8 mi

Sec. 30 – 72 – 28.

Lespedeza capitata
Liatris scariosa
Solidago rigida
Bromus –
Sorghastrum nutans
Aster multiflorus
Andropogon scoparius
" furcatus
Lespedeza frutescens
10 Achillea millefolium
Aster (azureus?) sericeus
Ambrosia artemisiifolia
Panicum scribnerianum
Antennaria ludoviciana
Solidago nemoralis
Rosa pratincola
Rhus glabra
Ruellia ciliosa
Symphoricarpos (red)
20 Amorpha canescens
Fragaria virginiana
Baptisia (smooth)
Solidago nemoralis
~~Sporobolus heterolepis~~
25 Potentilla canadensis
Gentiana andrewsii
Desmodium canadense
Salix humilis
Silphium integrifolium
30 Quercus (scrub)
~~Solidago canadensis~~
Helianthus scaberrimus (hirsutus?)
~~Salix ...~~
35 Elymus canadensis

36 – Vernonia noveboracensis
Ceanothus americanus
Veronica virginica
Cornus amomum
40 Muhlenbergia (large form)
Spartina michauxiana
Helianthus grosseserratus
Solidago graminifolia
Cirsium discolor
Aster novae-angliae

sec. 8 – 72 – 28
Moore Cemetery

Fungus (gilled) on wh. hickory.
Polyporus – stump of bur oak
" – red oak stump

On rr. Moore's farm

Rudbeckia hirta
Achillea –
Ceanothus ovatus
Aster multiflorus –
Petalostemum purpureum
Mirabilis mollis
Silphium laciniatum
Salix humilis
Lespedeza frutescens
10 Fragaria virginiana
Helianthus scaberrimus
Aristida tuberculosa
Panicum scribnerianum
Andropogon furcatus
Rosa pratincola
Viola pedatifida
Lespedeza capitata
Kuhnia eupatorioides var.
Andropogon scoparius
20 Antennaria plantaginifolia
Elymus canadensis
Ruellia ciliosa
Muhlenbergia – (same – type)
Rhus glabra
25 Solidago canadensis
Helianthus grosseserratus
Cornus amomum
Vernonia noveboracensis
Silphium integrifolium
30 Rhus toxicodendron
Sorghastrum nutans
Eryngium yuccifolium
Antennaria neodioica?
Helianthus rigidus
35 Amorpha canescens
Potentilla arguta
Baptisia smooth
Polygala ...
Heliopsis scabra
40 Coreopsis tripteris
Solidago nemoralis
Antennaria ludoviciana
Aster salicifolius
Symphoricarpos (red)
45 Chenopodium leptophyllum
Q. macrocarpa var.
Aster novae-angliae
Cirsium (discolor)
Aster ...
50 Ambrosia artemisiifolia
Veronica virginica
Spartina michauxiana
Bromus ...
Ocnothera biennis
55 Solidago ...

56 Hypericum —
Pycnanthemum flexuosum
Helianthus tuberosus
Sporobolus heterolepis
60 - Apocynum (...)
[illegible]
Pastinaca sativum
Petalostemum candidum
Lactuca ludoviciana
65 Erigeron canadense
Potentilla monspeliensis
Lepidium apetalum
Polygala incarnata
Muhlenbergia racemosa
70 Convolvulus sepium
Oxybaphus —
Erigeron ramosum

Swamps

Lycopus sinuatus
Verbena hastata
Asclepias incarnata
Hel. grosseserratus
Typha —
Scirpus validus
Mentha —
Aster salicifolia
Calamagrostis canadensis
Cicuta maculata
Agrostis alba?
Elymus virginicus

[illegible]

[illegible] 10

[illegible]

Lecture trip, 1912

Nov. 27 -	Car to Cedar Rapids	.50
	Lunch & paper " "	.15
	RR. to Schuyler	6.89
	Pillow	.25
Nov. 28 -	Breakfast on train	.50
	Telephone at Schuyler (to Stech)	.15
Nov. 29 -	RR. to Dodge (Pd. by Mr. Mundil)	.32
	Dinner at hotel	.50
	RR. to Scribner	.24
Nov. 30 -	Harder House - Scribner	1.00
	RR. to Wahoo	1.14
	Hotel La Grande - Wahoo - dinner & supper	1.00
	RR. to Prague	.36(?)
Dec. 2 -	RR. to Lincoln	.64(?)

1912

Aug. 15 -	RR. Arnold's Park to Mason City	$2.34
~~Aug. 16~~ -	Supper Sanders Rest. Mason City	.25
Aug 16	Car fare to Clear Lake	.25
~~Aug. 17~~ -	RR. to Garner.	.24
	RR. to Forest City	.24
	Team - Smith White's	3.00
	Bus fare " "	.25
	Breakfast - Home Restaurant	.25
Aug 17 -	Room Summit Hotel	.75
	- Breakfast - Maple Leaf Restaurant	.25
	Dinner - rest. Crystal Lake	.25
	Horse feed - " "	.25
	Supper - Summit Hotel -	.40
	Room — " "	.75
	Livery - G. M. White's	3.00
Aug. 18 -	Breakfast - Summit Hotel	.40
" 19 -	RR - to Thompson -	.21
	O'Hara - auto livery	1.50
	Juhl's Restaurant - lunch.	.15
	- lunch for field	.20
	RR. to Estherville -	1.10
	Room - Hotel Orleans -	.50
Aug 20 -	Breakfast - " "	.50
	Lunch for field - Restaurant	.20
	RR. to W. Okoboji	.40
	Supper at Orleans -	.50
Aug 28 -	RR. to Emmetsburg	.88
	Bike 25	.25
	RR. to Lake Park	.13
	Supper Lake Park Hotel	.50
Aug. 29	Room & breakfast " "	1.00
	RR to Ocheyedan	.23
	Dinner - Restaurant " -	.25
	RR. to Montgomery	.35

35 / 58 / 1.23

Aug. 30 -	Waverly Hotel, Emmetsburg Supper & room	1.00
	RR. to Mason City -	1.54
	Bike	.25
	Breakfast en route -	.50
	RR. Clear Lake to Mason -	25
	Dinner .15 Supper .25 Sanders Rest. Mason Cy -	40
	~~Breakfast " " " "~~ Car fare -	.35
Aug. 31 -	RR. to Joice -	.40
	Supper at Hotel " -	.25
	RR. to Mason Cy -	.40
Sep. 1 -	Dinner - Sanders Rest.	.25
	carfare to Clear Lake & return	.25
Sep. 2 -	Cab. to depot	.25
	RR. to Ft. Dodge C. &. W.	1.44
	Cab - " " (transfer)	.25
	RR to Storm Lake - Ill. C.	1.14
	Breakfast dinner - Bradford Hotel	1.00
	RR. to Cherokee - Ill. C	.55
	RR to Storm Lake - Ill. C.	.45
	Supper at restaurant -	.25
	Room Bradford Hotel -	.75
Sep. 3 -	Breakfast " " -	50
	- RR. to Sac City - C. M. & P.	.40
	- Bus - Storm Lake.	.15
	- Dinner - Park House - Sac City	1.50
	Bus	.10
	RR to Lake View	.18
	Hotel Windsor - supper -	.50
	RR. to Carroll -	.47
	Room at Burke's Hotel	.75
Sep. 4 -	RR. to Botna	.46
	RR. to Harlan	.36
	Bus "	.25
	Supper .50, room .75 - Harlan House	1.25
Sep. 5 -	Breakfast .50 - " "	.50
	RR. to Manning - C. & W. ~~Lunch~~ - "	.48
		.25
	RR. to Council Bluffs ~~Lunch - Co. Bluffs~~ Supper en route	1.34
	RR. - to Chariton	3.78 .50
	Bus to Hotel	.25
	Room - Bates House	.50
Sep. 6 -	Breakfast, Dinner, Supper, Room	2.00
Sep. 7	RR. to Indianola	.68
	Lunch - depot restaurant - Chariton -	.20
Sep. 7 -	RR. to Des Moines	.44
	~~Lunch~~ depot rest. - Des Moines	.25
	- RR. Des Moines to Iowa City	2.41

The Biology of Physa
Jean Dawson
Henry Holt & Co.

Take photos -
Spring Cary N. of Millers.
Vsssts at Spring.

Nov. 14 -	To Cedar Rapids	.50
" 15 -	Hotel	3.00
	RR to Earlville	1.04
	RR to Charles City	2.12
Nov. 16	Hotel Hildreth " "	2.50
	RR. to Mason	.56
" 17 -	RR. to Nora Jc.	.20
	RR. to Iowa City	2.90

Mr Gabler
Contractor & owner
of large sand pit E. of City

Tracky - 1832 ft.